FACTORS INFLUENCING POSTNATAL EMOTIONAL DISTRESS AND BARRIERS TO HELP-SEEKING

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ABSTRACT

Introduction: Historically, postnatal depression (PND) has been the main focus for maternal mental health. However, there is evidence that women experience other emotional difficulties in this period. Mental health is particularly important in the postnatal period as maternal morbidity has far reaching consequences for mother, child and partner. Despite effective treatments being available a large number of women do not seek help for postnatal mental health problems. This study aims to explore emotional distress in the postnatal period and examine factors influencing postnatal emotional distress, in order to facilitate detection and prevention. It aims to gain a better understanding of what the perceived barriers to seeking help in the postnatal period may be, and explore what interventions may be acceptable to women at this time in their lives.

Method: A review of the literature failed to find a measure suitable to assess barriers to help-seeking. A questionnaire was developed based on qualitative literature, interviews with postnatal women and expert opinion. This questionnaire was piloted in a pack of questionnaires including: a measure of distress (DASS-21), social support (SOS) and life events (adapted form of the LTE). The study used a cross-sectional survey design to investigate the symptomatology of depression, anxiety and stress in a group of postnatal women in West Lothian. A between subjects design was adopted to look at differences between women with and without significant levels of symptomatology.

Results: The responses to questionnaires were entered into SPSS. 16.7 per cent of the sample was identified as suffering from depressive symptomatology, 9.1per cent anxiety and 18.2 per cent stress symptomatology (as identified by the DASS-21). Multiple regression revealed that stressful life events and lack of social support were predictive of postnatal emotional distress. In addition parity was predictive of depressive symptomatology. Barriers to help-seeking were influenced by social support and level of distress, suggesting that vulnerable women may be less likely to seek help. In addition information was gathered about women's preferences for support with postnatal emotional distress.

Discussion: Evidence was presented for widening the focus of PND to look at postnatal emotional distress. Risk factors predictive of distress were highlighted and interventions suggested based on these and women's treatment preferences. Barriers to help-seeking appear to be more salient for vulnerable women, who are most in need of support. The implications of this research are relevant for policy makers and further research in aspects of perinatal and postnatal mental health.

1. INTRODUCTION

1.1 Overview

This chapter provides background to the thesis and will cover the following topics:

■ Postnatal emotional distress

■ Impact of postnatal distress

■ Barriers to help-seeking and treatment preferences

■ National and local context

■ Rationale for the study and research questions

1.2 Postnatal emotional distress

"The thief that steals motherhood" (Beck, 2006, p. 40)

Babies are often referred to as 'bundles of joy', reflecting society's view of childbirth as a joyous occasion. Unfortunately, not all women find the postnatal[1] period a positive or pleasant experience. Honoré De Balzac (1841, ¶ 2) commented, "The art of motherhood involves much silent, unobtrusive self-denial, an hourly devotion which finds no detail too minute." This highlights a view that even the trials of motherhood are often looked upon admirably.

[1] 'postnatal' refers to the period from birth to one year

1.2.1 Definition of postnatal depression

Although the term postnatal depression often describes a range of difficulties throughout the postnatal period, it refers specifically to a unipolar, non-psychotic, depressive illness (Beck, 2006). Requirements for clinical diagnosis specify that women meet the criteria for major depressive disorder set out by the Diagnostic and Statistical Manual of Mental Disorders fourth edition (DSM IV) (American Psychiatric Association, 1994). Criteria for diagnosis include: dysphoric mood or marked diminished interest in pleasure along with five other symptoms, such as disturbed sleep, changes in appetite, psychomotor disturbance, fatigue, excessive guilt, and suicidal ideation. Typically, symptoms are required to be present for at least one week and result in impairment of functioning (O'Hara *et al.*, 1990). For a diagnosis of postnatal depression (PND) there is the additional specification that the symptoms occur within the postnatal context (the first four weeks following birth). However, clinicians and researchers agree that this is limiting and consequently the Scottish Intercollegiate Guidelines (SIGN, 2002) specify 'it is as an illness occurring during the first postnatal year' (p.2).

PND is different from the 'baby blues', which is a common experience for new mothers. One study found 50 to 75 per cent of new mothers will experience 'baby blues' (Kenerly & Garth, 1989). Symptoms tend to last for a few days and include crying, fatigue, anxiety and emotional liability (Beck, 2006). PND is also distinct from puerperal psychosis, a serious but rare disorder that affects one to two women per 1000 births and features delusions, hallucinations, extreme agitation, confusion, inability to eat or sleep and exhilaration or mood swings (Seyfried & Marcus, 2003).

PND is not recognised as a distinct diagnosis by either the DSM IV APA (1994) or the International Classification of Diseases 10 (ICD 10) (World Health Organisation, 1990). Nosologists assume that PND is not qualitatively different from depression experienced at other times of life however, in research and practice PND is considered a distinct entity. This distinction has implications for both the research and treatment of PND. Consequently, research tends to proceed separately with investigation into PND often lagging behind (Whiffen & Gotlib, 1993). A consideration of the clinical presentation, prevalence, onset and aetiology of PND and issues around its conceptualisation as a distinct entity, or otherwise, will be discussed below.

1.2.2 Clinical presentation

Pitt (1968) compared symptoms of PND with depression seen in general practice and outpatient clinics. He reported symptoms of PND to be relatively mild and 'atypical'. He suggested that women suffering from PND experienced less suicidal ideation, early morning awakening and worsening of mood in the morning. He also noted higher than usual levels of anxiety and irritability. Whiffen (1992) conducted a literature review and compared the results of two studies (Hamilton, 1989; Hopkins *et al.*, 1989). Hopkins *et al.*, (1989) reported the frequency of symptoms in a sample of women with PND and Hamilton (1989) collected data from women with depression in a general psychiatric practice. Whiffen (1992) calculated the percentage of women reporting symptoms in the two samples and found that women with PND were more likely to experience more guilt, anxiety and (perhaps not surprisingly) fatigue, with women in the general practice experiencing higher levels of suicidal ideation. Whiffen (1992) concluded PND was an 'anxious depression' and observed that the symptoms of PND reported were often milder than those reported from the women in

general practice and thus suggested that the difference in suicidal ideation was related to severity of symptoms. Although Whiffen (1992) classified PND as an 'anxious depression' it is unlikely that the presence of anxiety can distinguish PND from depression in itself as anxiety is known to commonly occur co-morbidly with depression. Hamilton (1989) reported the presence of anxiety in 86 per cent of the depressed women assessed in the general practice sample. Following this study Whiffen and Gotlib (1993) looked at the presentation of PND and non-postnatal depression. They compared a sample of depressed postnatal women with a group of non-childbearing depressed women and also found the primary difference was in the severity of symptoms reported. The researchers concluded that most episodes of PND involve symptoms at the level of an adjustment disorder.

The above research suggests that although PND was traditionally thought of as 'atypical' depression (Pitt, 1968) more recent studies have failed to find differences in clinical presentation and suggest that differences that do occur can be accounted for by severity of symptoms (the absence of suicidal ideation) or due to the demands of motherhood (fatigue). This research suggests PND is not qualitatively different from depression at other times. The lack of distinction between the clinical presentation of depression and PND is reflected in the use of the same DSM IV criteria (APA, 1994) to diagnose both depression and PND.

1.2.3 Prevalence

PND is often considered to be more common than depression at other times (Whiffen & Gotlib, 1993). Estimates of prevalence can vary depending on methods used to define participants as depressed. Studies using receipt of medical treatment as the

criterion have found the lowest rates, suggesting that around 3-5 per cent of women suffer from PND (Dalton, 1971). However these studies are generally considered too restrictive, as not all women suffering PND will seek support. The highest levels of prevalence rates are estimated by studies that use self-report measures. These studies estimate that between a quarter and a third of all mothers will suffer PND (Gotlib *et al.*, 1989). Prevalence rates are generally accepted to be between 8-35 per cent depending on the methodology used (Milgrom *et al.*, 2006). O'Hara and Swain (1996) conducted a meta-analysis of 59 studies and concluded that the average prevalence rate was 13 per cent. They examined differences in the methodologies used and observed these to be relatively small, with around a 2 per cent difference found between self report measures and clinical interviews. O'Hara and Swain's (1996) prevalence estimate of 13 per cent is similar to the SIGN guidelines, which estimate that for every 1,000 live births, 100-150 women will suffer a depressive illness (SIGN, 2002).

There are several factors that need to be considered when examining prevalence rates as not all women will seek help for depression or participate in research. A study by Whitton *et al.*, (1996) revealed that out of 78 per cent of women who met the criteria for depression only 32 per cent believed that they were depressed. This suggests that women (particularly first time mothers) may attribute their difficulties to a normal part of childbearing. Furthermore, women may minimise negative feelings in an attempt to fit into a culture where the birth of a child is considered a positive event (Whiffen, 1992) and consequently their suffering may go undetected regardless of method used to detect PND.

If PND were considered a distinct entity then we would expect a unique prevalence rate when compared to depression at other times. Only three studies have looked prevalence rates of PND depression using a comparison group of non-childbearing women of similar age (Cooper *et al.*, 1988; Cox *et al.*, 1993; O'Hara *et al.*, 1990). These studies collectively found that there was no difference in point prevalence, or overall prevalence rates of non-psychotic psychiatric disorder between postnatal women and controls. In addition Gavin (2005) conducted a systematic review and concluded that prevalence of depression is not higher during pregnancy or the first postnatal year than at non-childbearing times.

1.2.4 Onset

Although it can be concluded that there is no difference in the prevalence rate of depression and PND studies have found that the onset of depression in postnatal women is closely linked to delivery. Cox *et al.* (1993) found a threefold higher rate in the onset of depression within five weeks of childbirth compared to matched non-childbearing women; they attributed this to the stressful event of childbirth and subsequent psychosocial impact. Cooper *et al.* (1998) also observed that the onset of PND was soon after delivery with 50 per cent of cases developing in the first three months and 75 per cent by six months postpartum. In another study O'Hara *et al.* (1990) recruited a large sample of pregnant women along with an equal sized matched sample of non-childbearing women. They concluded that childbearing women experienced significantly higher levels of depressive symptomatology and poorer social adjustment than the non-childbearing women towards the end of pregnancy and early postnatal period. Although they found that some women had higher depressive

symptomatology towards the end of pregnancy they concluded that the majority of cases of PND developed within the first three months of the postnatal period.

These studies suggest that for some women PND may occur following the first weeks of delivery, perhaps precipitated by the stressful act of giving birth and the early adjustment to motherhood. However, for other women PND may develop slowly occurring over months within the first postnatal year. This discrepancy is reflected in the different definitions of PND used for the diagnostic criteria (DSM IV: APA, 1994) (depression occurring in the first four weeks postpartum) and the SIGN guidelines (SIGN, 2002) (depressive illness occurring in the first postnatal year).

1.2.5 Aetiology of postnatal depression

1.2.5.1 Biological model

Some researchers have proposed a biological model to account for PND. This research proposes that the fluctuation of oestrogen and progesterone are aetiologically related to PND. These hormones are thought to rise during pregnancy and drop shortly after delivery and are thought to impact on the area of the brain known to be involved in the control of mood by reducing serotonin levels (Kammerer *et al.*, 2006). It is also thought that that major changes in the hypothalamic-pituitary-adrenal (HPA) axis could play an important role in the development of PND. The postnatal period is associated with a lower HPA function, which results in a drop in cortisol (Krammerer *et al.*, 2006; Steiner *et al.*, 2003) and this hormone has been linked to both stress and depression (Chrousos & Gold, 1992). However hormonal explanations can only

account for the development of PND in the first few weeks postpartum and cannot explain how all women experience the hormonal fluctuations but only 13 per cent develop PND (Steiner *et al.*, 2003). Due to this, Krammerer *et al.* (2006) suggest that there may be a subset of women who have a unique sensitivity to hormonal changes and these are the women who develop PND.

Thyroid dysfunction has been also been implicated as a biological explanation for the development of PND (Gale & Harlow, 2003). It is known that pregnancy and the postnatal period can result in endocrinal dysfunction for some women, however, it is believed that this can only account for 1 per cent of all sufferers of PND (Steiner *et al.*, 2003). In addition Gale and Harlow (2003) highlight that although PND and thyroid dysfunction may co-occur it is difficult to determine the relationship between the two.

Currently the support for the biological model of PND remains unclear and due to this most researchers agree that a multi-factorial approach to understanding PND is required.

1.2.5.2 Biopsychosocial model

The biopsychosocial model was first developed by Engel (1977) and describes the interplay between biological, psychological and social factors. It can be used to formulate a number of conditions and factors are thought to contribute to the development of a condition, but are not thought to be causal.

Psychosocial factors are thought to be the strongest predictors of PND (Gale & Harlow, 2003). A number of meta-analyses have looked at psychosocial risk factors for PND (Beck, 2006; O'Hara & Swain, 1996; Pope, 2000). Three main risk factors emerge with agreement from the majority of studies: psychiatric history, poor social support and negative life events (Pope, 2000). These will be discussed in turn below.

1.2.5.2.1 Psychiatric History

There is evidence that women with a psychiatric history are more likely so suffer PND. It is thought that women with a history of non-psychotic depression are more likely to develop PND (Beck, 2006; O'Hara & Swain, 1996; Pope, 2000). In addition, it has been suggested that a history of depression may interact with other difficulties, for example, obstetric complications and increase a women's risk of developing PND (Cooper & Murray, 1998).

It has also been shown that a history of other emotional difficulties may increase the risk of PND. Research has found that emotional problems during the antenatal period may increase the risk of PND. Matthey *et al.* (2003) found that a history of anxiety during pregnancy can be particularly predictive of developing depression in the postnatal period. A study comparing women with PND, non-childbearing depressed women and two control groups (with and without children) found that 60 per cent of the women who developed PND had previously sought treatment for emotional problems. Conversely, only one of the childbearing women who had previously sought help did not become depressed (Whiffen & Gotlib, 1993). Thus the researchers concluded that women with a history of help-seeking for emotional or psychological difficulties may be at an increased risk of developing PND.

The research presented above has shown that psychiatric history is a risk factor for PND. This can be taken to suggest that the postnatal period is a time of vulnerability to stressors, which can lead to the development of depression in people vulnerable to emotional disorders. Whiffen (1992) suggest this increased vulnerability attributed to a psychiatric history is no different to the development of depression at other times.

1.2.5.2.2 Social support

It has long been recognised that a lack of social support is a risk factor for developing depression (Brown & Harris, 1978). Two main support functions have been identified in the literature: emotional support and practical. Although the value of emotional support is emphasised as protective against depression (Champion & Goodall, 1998) Kaniasty and Norris (1992) suggest that the provision of practical support may be particularly protective in managing life transitions. Both components of social support have been found important across the transition to parenthood (Goldstein *et al.*, 1996). In addition, the perceived adequacy, or satisfaction with support has been shown to be important and people less satisfied with support more likely to suffer emotional difficulties (Champion & Goodall, 1998).

Women with poor marital relationships appear to be particularly vulnerable to the development of PND (O'Hara & Swain, 1996). Goldstein *et al.* (1993) indicated that women with smaller, less satisfactory networks experience more PND especially when they are less satisfied with partner support. Support from a mother is also thought to play a significant role in the successful transition to motherhood. Fischer (1981) found that 'when daughters become mothers, mothers and daughters tend to re-evaluate each other and become more involved in each other's lives' (p.1)

suggesting that there is something unique about the postnatal period that draws mothers and daughters together. Pope (2000) reported that lack of support from a woman's own parents during the transition to parenthood can be associated with the development of PND.

1.2.5.2.3 Adverse life events

Life events can be thought of as a range of experiences, many of which are normative and not all distressing. Brown and Harris (1978) give the following examples: 'finishing school, starting a job, leaving parents, marriage, birth of a child, death, divorce, promotion' (p.64). Adverse life events have long been associated with the development of depression; specifically life events associated with marked or moderate long-term threat have been shown to play a role in the development of depression (Brown & Harris, 1978). Adverse life events have also been found to be a risk factor for PND (Beck, 2006; O'Hara & Swain, 1996; Pope, 2000). Specifically PND has been linked with stressful events that occur during the pregnancy, delivery, or immediate postnatal period. Glynn *et al.* (2004) looked at 292 pregnant women who reported the occurrence of, and affective responses to, a range of adverse life events during pregnancy to determine whether events experienced in the first trimester were, as predicted, more stressful than those occurring later in pregnancy. The researchers concluded that life events occurring later in pregnancy were experienced as less distressing to the women. Thus, although there is evidence that distress from life events decreases towards the end of pregnancy, life events that impact into the postnatal period may be more distressing. This is illustrated by Pope (2000) who suggests that life events already distressing during pregnancy can become

even more so following childbirth, especially for women who have multiple stressors and limited support.

Whiffen and Gotlib (1993) state that if PND is a distinct diagnosis it should be related aetiologically to a variable specific to childbirth. However, having considered the evidence, this does not seem to be the case as the risk factors appear the same for depression and PND.

1.2.6 Section summary

The previous sections (1.2.1 to 1.2.5) looked at the clinical presentation, prevalence, onset and aetiology of PND to determine if it was a distinct entity. The evidence discussed above points towards PND not being considered different from depression at other times. This assertion is supported by Whiffen (1992) who states 'PND does not differ qualitatively from non-postnatal depression' (p.485). Although PND is not considered a distinct diagnosis there is something unique about depression in the postnatal period due to its unique impact. Depression in the postnatal period requires urgent intervention as it affects the mother's ability to care for her child and family (NICE, 2007). SIGN (2002) summarise this by saying 'postnatal depression is particularly important because it occurs at such a critical time in the lives of the mother baby and her family' (p.1).

However, if PND is no different to depression at other times, it can be reasonably predicted that women are therefore also susceptible to other emotional difficulties during this time. Matthey *et al.* (2003) support this assertion by highlighting that women can suffer from the full spectrum of emotional disorders during the

postpartum period and that concepts of anxiety and stress are often subsumed within a diagnosis of depression and thus unrecognised. This suggests a rationale for widening the focus from postnatal depression to look towards postnatal emotional *distress*.

Although depression and anxiety are often considered co-morbid disorders there is little research on the prevalence or impact of anxiety in the postnatal period (NICE, 2007). What studies do exist have highlighted the consequences of anxiety in the antenatal period and concentrated on attempting to predict PND from antenatal anxiety (NICE, 2007). Although anxiety in pregnancy has been shown to be a risk factor for PND, Austin and Priest (2005) state that the antenatal prediction of PND is an unlikely and unfeasible goal as indices administered early in pregnancy with the aim of predicting PND are largely unsuccessful. Screening in pregnancy is important in its own right as women may show symptoms of distress that may be amenable to early intervention. However, the scope of this thesis will be to look at *postnatal* emotional distress in an attempt to move the focus away from PND and increase awareness of women experiencing other emotional difficulties in the postnatal period.

1.3 Impact of postnatal emotional distress

The majority of studies looking at the impact of postnatal emotional distress have focused on depression. This section will outline research highlighting the impact of postnatal distress on the mother, child and partner.

1.3.1 Impact on the mother

Historically few studies have documented the impact of PND on the mother. Leahy-Warren and McCarthy (2007) recently reviewed the qualitative literature and

described the experience of PND as culminating in feelings of loneliness, anxiety, hopelessness and a loss of control and former identity. In addition, the experience of coping with postnatal depression has been described as 'teetering on the edge', a four stage process that involves: 1) encountering terror; 2) the dying of self; 3) struggling to survive and 4) regaining control (Beck, 1993).

PND appears to follow a similar course to non-postnatal depression with the majority of cases reporting that their symptoms remit within 3-6 months, although around 10 per cent of women show evidence of PND up to a year postpartum (Cooper & Murray, 1998). In a study comparing a group of mothers with PND with a group of non-depressed mothers, the mothers with PND reported that interaction with their babies was less reinforcing and that overall their babies were less adaptable, more moody and demanding. In addition, the postnatally depressed mothers rated themselves as less competent parents and reported being less emotionally attached to their child (Cooper & Murray, 1998). Another study by Milgrom and McCloud (1996) found that mothers suffering from PND reported that they were more socially isolated and less satisfied in the relationship with their husband or partner than non-depressed mothers. These differences were found to persist over a 3 to 12 month period, even when the levels of depression decreased, suggesting the impact of PND can remain after symptoms remit. However, as social support is shown to be a risk factor for PND it can be suggested that the dissatisfaction with spousal relationships may have preceded depressive symptomatology. Nevertheless, depression in the postnatal period is likely to negatively impact on the interpersonal relationships between partners (Ballard & Davies, 1996)

PND has been found to impact on health related quality of life. Boyce *et al.* (2000) reported that women with PND reported role limitations due to physical health, emotional functioning, impaired social functioning, poorer mental health and less vitality. Da Costa *et al.* (2006) examined health related quality of life (HRQoL) whilst considering the impact of social support and sleep quality. They found that when controlling for these factors women with PND still had worse functioning on measures of HRQoL and suggest that even the presence of mild depressive symptoms may impact on physical health status. The results of these studies have to be interpreted with caution as the control was normative data and so the influence of pregnancy on HRQoL cannot be ascertained.

Although Pitt (1968) concluded that women suffering from PND experienced lower levels of suicidal ideation there is evidence that, as with non-postnatal depression, suicide is still a risk (SIGN, 2002). The UK confidential enquiry into maternal death (The Royal College of Obstetricians and Gynaecologists, 2001) reported that psychiatric disorder contributed to 12 per cent of maternal deaths and that suicide is the second leading cause of maternal death following cardiovascular disease. This suggests that with maternal morbidity comes a risk of mortality that would have a lasting impact on the child and partner.

1.3.2 Impact on the child

Infants are entirely dependent for their survival, health and well being on those who provide their care. Research has shown that the care provided by a mother to her infant may be compromised if she is suffering from postnatal depression or other

mental health difficulties. A growing body of research has accumulated around this issue.

1.3.2.1 Impact in infancy

Research has shown that postnatal depression is associated with difficulties in responding to the baby in social interactions. Studies have looked at face-to-face interactions with infants of depressed mothers. Field (1984) recorded depressed and not depressed mothers interacting with their 3 month old infants. The results showed that infants of depressed mothers displayed fewer positive facial expressions, more negative facial expressions and protest behaviour. In addition, research has shown that depressed mothers tend to spend less time matching behaviour states with their infants, and when this does occur they engage in the matching of more negative than positive states (Field *et al.,* 1990). This style of interaction is not restricted to the depressed mother and research has shown that infants who have experienced these patterns of interaction generalise these behaviours to contact with non-depressed adults (Field, 1984). It should be noted that these studies were conducted largely in socially disadvantaged populations. For example, the behaviour state matching study (Field *et al.,* 1990) used a high proportion of adolescent mothers (35 per cent) and single parents (75 per cent). Murray *et al.* (2003) comment that socio-economic disadvantage tends to magnify difficulties and that, when PND occurs in low risk samples, difficulties in social interaction tend to be subtle.

Two studies have looked at infant behaviour independently from mother-child interaction. Cartona and Troutman (1986) used maternal reports, crying records and direct observation of infants crying and found that infants of depressed mothers

showed more ‘difficult’ behaviour. In addition, Whiffen and Gotlib (1989) assessed the behaviour of two-month-old infants and found that infants of depressed mothers were more tense, less content and deteriorated more quickly under the stress of developmental testing.

A number of studies have examined 12-21 month old infants of mothers who have PND. These studies have found an association between depression and adverse cognitive and emotional development (Murray & Cooper, 1997). Infants of depressed mothers show poorer cognitive and motor development at one year even when controlling for maternal IQ and current depression (Lyons-Ruth *et al.*, 1986). Murray (1992) compared infants of mothers with PND and a community sample at 18 months and found that the children of depressed mothers were more likely to fail on Piaget’s object concept task suggesting poorer cognitive development. Gender seems to influence the impact of PND on infant cognitive development with boys of depressed mothers generally under performing against girls (Lyons-Ruth *et al.*, 1986). These studies suggest that the impact of PND on cognitive development may last into the child’s first year and that boys may be more sensitive to its effects. It is thought that boys’ sensitivity to the cognitive impact of PND is related to their increased risk of behavioural and emotional difficulties when compared to girls with mothers suffering PND (Sinclair & Murray, 1998). The potential mechanism of this will be discussed below when looking at the impact of PND in childhood (Section 1.3.3.2).

The impact of PND on infants’ emotional functioning has been looked at by a variety of studies examining infants’ communication with their mother (Stein *et al.*, 1991), the quality of mother-infant attachment (Martins & Gaffan, 2000) and the level of

behaviour problems in infants (Murray, 1992; Whiffen & Gotlib, 1989). These studies will be discussed in turn below.

Stein *et al.* (1991) examined mother-child interaction between a group of women who suffered PND and women free from psychiatric disorder at nineteen months postpartum. Mothers with PND and their children showed a reduced quality of interaction, with less facilitation, effective sharing, and initial sociability with a stranger. Similar but reduced effects were also found in a subgroup of children whose mothers had recovered from PND by nineteen months postpartum. Again, Stein *et al.* (1991) found that social and marital difficulties were associated with poorer mother-child interactions.

PND is thought to disrupt the development of secure attachment between mother and baby. It is hypothesised that mothers with PND are unable to interact in a sensitive and psychologically available manner with their child, which disrupts the bonding process (Cummings & Davies, 1994). Lyons-Ruth *et al.* (1986) found an association between high levels of depression and insecure infant attachment at 12 months. In addition, a meta-analysis looked at the effects of maternal depression on patterns of mother-infant attachment and showed that infants of depressed mothers were less likely to have secure attachment and more likely to have avoidant and anxious attachment styles (Martins & Gaffan, 2000).

A study by Whiffen and Gotlib (1989) found that depressed mothers perceived their infants as more difficult to care for and more bothersome than non-depressed mothers, but did not attribute these factors to temperament. They concluded that this research suggests PND is associated with an identifiable pattern of infant behaviour, which

may exacerbate maternal mood. Murray (1992) interviewed mothers and found that those who had experienced postnatal depression were more likely to report behavioural difficulties such as problems with sleeping, eating, excessive temper tantrums and separation problems. However, caution is required when interpreting the findings of studies that rely on maternal reports of infant behaviour, as due to the subjective nature perceptions may be influenced by depressed mood. Nevertheless, when considered with the other studies they provide evidence that PND impacts on infant emotional development that may present as emotional difficulties.

1.3.2.2 Impact in childhood

Research into the impact of PND in childhood reports less consistent findings than in infancy. Cogill *et al.* (1986) examined the cognitive development of four –year –old children of mothers who had suffered PND and found that these children had compromised cognitive development. Sharp *et al.* (1995) again looked at the impact of PND on children's cognitive development and found that poor cognitive status was confined to the boys. This again implicates gender as a unique vulnerability factor. In parallel with studies looking at cognitive development in infancy the impact of PND on children's cognitive development seems to be mediated by socio-economic disadvantage. Murray *et al.* (1996) failed to find differences in cognitive development in children of depressed mothers when looking at low risk samples.

Sinclair and Murray (1998) looked at the impact of PND on emotional functioning in children. In an attempt to reduce bias from maternal reports of child behaviour they used teacher's reports to look at the impact of PND on the child's adjustment to school. They found that maternal depression was significantly associated with raised

levels of child disturbance, especially in boys of lower social class families. The boys showed more signs of hyperactive and distractible behaviour than girls whose mothers had PND. They concluded that the findings indicate a persistent effect of PND on child adjustment. Although there is insufficient research to draw conclusions about the mechanisms of this Weinberg and Tronick (1998) suggested that males rely more on maternal support to regulate their affective states and take longer to repair 'interactive errors' than females and consequently they may set a pattern of relating that is maintained over time.

Essex *et al*. (2001) used a similar method to examine the effect of PND. They carried out assessments of maternal mood to differentiate when children were exposed to maternal depression (i.e., in infancy, the toddler/pre-school period or never). Teachers then completed questionnaires about the children's internalising and externalising behaviour. The researcher concluded that early exposure to PND was associated with externalising problems and internalising symptoms. It should be noted, however, that the researchers did not consider other factors that may have influenced child behaviour, such as, contextual stressors and individual child characteristics.

1.3.3 Impact on husband or partner

Meighan *et al.* (1999) conducted qualitative research to gain a deeper understanding of the impact of PND on the family system. Interviews with partners of women suffering PND highlighted that men experienced primarily confusion and concern for their partner. They described feeling an inability to overcome the problem, which resulted in fear and anger. In an attempt to hold the relationship and family together,

men described making sacrifices and being left with a relationship much changed from the one they had previously enjoyed.

Partners of women suffering from PND reported feeling more restricted in parenthood and being less satisfied with their marriage at three, six and twelve months postnatally, compared to partners of non-depressed postnatal women (Milgrom & McCloud, 1996). Studies have also found that having a partner suffering psychiatric morbidity increases the risk of psychiatric illness among men in the postnatal period (Ballard & Davies, 1996; Matthey *et al.*, 2003). Matthey *et al.* (2003) looked at couple concordance rates for postnatal depression and anxiety disorders. They concluded that clinicians should expect that 1 in 10 partners of distressed mothers will also be distressed at this time, reflecting adjustment difficulties in new parents.

It is recognised that the presence of depression can put a strain on relationships. Ballard and Davies (1996) comment that depression in the postnatal period places additional strain a relationship that is already adjusting to the transition of having a baby. Consequently, the presence of a mood disorder during this transition is likely to increase distress and reduce support available to either partner, resulting in a cycle of dissatisfaction that may act to maintain difficulties.

1.3.4 Section summary

The evidence suggests that the impact of maternal morbidity in the postnatal period is far reaching and has consequences for mother, child and partner. This is particularly important to the infant who is dependent on its parents for all aspects of care. Current evidence shows the negative impact PND can have on the cognitive and

emotional development of the infant or child. In addition, the impact on the mother can outlast the postnatal period and carries a risk of suicide. Having a partner suffering from PND may also impact on the father's mental health and ability to fulfil their parenting role. This can result in a cycle of dissatisfaction as the partner's ability to provide support for the mother suffering PND is lessened. PND presents as a highly significant public health concern due to its high prevalence rate and trans-generational impact.

Although the research outlined above discusses the impact of PND, there is evidence that other emotional disorders in the postnatal period can have a negative impact. NICE (2007) highlights the importance of treating sub threshold symptoms of anxiety stating that it has a detrimental impact on the mothers, infants and the wider family, impacting on a mother's ability to parent. Overall, the impact of postnatal emotional disorders suggests that efforts should be directed towards the identification of high-risk samples, which will aid the development of preventative interventions and increase early detection and treatment. However, such women are difficult to identify as they often suffer covertly (Beck, 2006).

1.4 Barriers to help-seeking & treatment preferences

Section 1.3 has looked at the impact PND can have on the mother, child and partner. This section will examine perceived barriers to help-seeking and maternal treatment preferences in the postnatal period. The acceptability of treatment strategies is an important issue and can in itself be considered a barrier to help-seeking and will also be discussed in this section.

1.4.1 Barriers to help-seeking

There is evidence that women do not seek help for emotional difficulties in the postnatal period. Seeley *et al.* (1996) assert that around 40-50 per cent of episodes of postnatal depression remain undetected in the UK. This situation may arise for a variety of reasons. Firstly, unless formal screening procedures are used the clinician may rely on the mother volunteering any difficulties she is experiencing (Murray *et al.*, 2003). However, people who are depressed often experience considerable guilt and shame, feeling they ought to cope better and so are reluctant to admit to experiencing low mood. A depressed mother may fear that health professionals, or even other mothers will judge her as inadequate and also fear at the most extreme that her baby will be taken away (Dennis & Chung-Lee, 2006)

Dennis and Chung-Lee (2006) highlight that sufferers of PND are often left undiagnosed and untreated. There is evidence that women from diverse cultures do not proactively seek help for PND. Studies have looked Indian women, (Rodrigues *et al.*, 2003), Chinese women (Chan & Levy 2004), Icelandic mothers (Thome, 2003) and women in the UK (Whitton *et al.*, 1996). These studies have found that even when PND is identified mothers frequently do not obtain assistance. Barriers to help-seeking can be thought of as any factor which reduces the likelihood of women seeking help (Dennis & Chung-Lee, 2003)

A United Kingdom study by McIntosh (1993) looked at 38 women with PND and found that only 25 per cent consulted a health professional about their distress, with the majority of women suggesting that turning to professionals was regarded as either threatening or inappropriate as a solution. The researcher concluded that women's

reluctance to acknowledge that they were suffering emotional difficulties presented as a major a barrier to help-seeking (McIntosh, 1993). However, it should be noted that this study looked at primiparous women. It has been reported that mothers can fail to seek help if they do not recognise that they are suffering PND and consequently, attribute their difficulties to a normal part of motherhood (Dennis & Chung-Lee, 2006). Ugarriza, (2004) Piloted a group programme for PND and considered barriers to seeking help. She described the main obstacle to treatment as denial of the experience of PND and consequently a tendency to minimise symptoms. In addition women who did recognise that they were suffering from depression were often unable or unwilling to disclose their feelings to family, friends or health professionals due to feelings of shame and failure. Templeton *et al.* (2003) found that women were reluctant to disclose their feelings as they underestimated the duration of PND, thought that they were expected to cope and were ignorant of symptomatology. Cultural conceptualisations of postnatal mental health have also been thought to contribute to women not seeking help. For example, in a Scottish study (Templeton *et al.*, 2003) mothers reported not seeking help as they felt they should cope and were worried that PND implied that they were weak or a failure as a mother.

As lack of knowledge was perceived as a barrier to help-seeking, it is not surprising that education about PND was seen as a facilitator for women seeking help. Japanese mothers with antenatal education about PND were more likely to seek help when difficulties arose (Okano *et al.*, 1998). Furthermore the availability of childcare facilities for some mothers encouraged help-seeking. Ugarriza (2004) found that women often cited a lack of childcare or having to look after their family or a sick child as a reason for not attending treatment. In addition, Dennis and Chung-Lee (2006) commented that insufficient time and inconvenient appointment times were

sometimes cited as barriers to help-seeking. This suggests that there is a practical component to help-seeking in the postnatal period.

McIntosh (1993) found that women who did not seek help often had family members who lacked knowledge about PND so were unable to provide assistance and promote help-seeking. In addition Templeton *et al.* (2003) found that in black and ethnic minority families it is often unacceptable to discuss personal difficulties outside the family system and so mothers with PND can be discouraged from seeking help outside the family context. The role of the husband or partner has been highlighted as particularly important for facilitating help-seeking as partners who encourage women to seek help early when they are experiencing difficulties may prevent the development of PND (Dennis & Chung-Lee, 2006).

Dennis (2004) found that health professionals play a salient role in either promoting or hindering help-seeking as research suggests that mothers with PND are high users of health services. Thome (2003) conducted a follow-up study looking at the healthcare of mothers with PND and found health professionals could act as barriers to help-seeking if they fail to have sufficient knowledge about postnatal mental health, do not carry out comprehensive assessments and fail to identify difficulties. This research also found that one of the most important factors in predicting a mother disclosing distress was her relationship with the health professional. This highlights the importance of health professionals receiving adequate training and also having the time to build trusting relationships with new mothers.

McIntosh (1993) showed that health professionals often attempt to normalise a mothers distress and so do not always offer what the mothers feel are appropriate

interventions. Consequently, these women tend to become reluctant to raise difficulties again and are prevented from seeking help in the future. Parvin *et al.* (2004) found that the majority of women who did not seek help feel that health professionals are available for concerns with their physical health and are uninterested in their emotional experiences of motherhood.

1.4.2 Maternal treatment preferences

Booth *et al.* (2004) conducted a study looking at women's views of taking medication in the postnatal period. They surveyed thirty-five women who had been prescribed anti-depressant medication for PND. They found that overall compliance was poor with all the women indicating reluctance to take medication. In total Booth *et al.* (2004) concluded that of the women prescribed medication eight reported not taking it and another nine suggested that they did not take it as prescribed. The reluctance of women to take medication in the postnatal period is backed up by Thome (2003) who showed that Icelandic mothers did not view pharmacological treatment as acceptable. Women have cited a number of reasons for their reluctance. Firstly, the acceptability of medication is particularly low due to concerns about transmission through breast milk. In addition women are concerned about long-term use and potential side effects as well as the stigma related to medication use (Booth *et al.*, 2004). Research has found that negative perceptions of pharmacological treatment remain even when education is provided and symptom management is obtained through medication use (Booth *et al.*, 2004).

When looking at treatment preferences for PND, mothers in the postnatal period from different countries and cultures show a preference to be able to talk about their

difficulties (Oates *et al.*, 2004) with an empathic, sympathetic listener (Dennis & Chung-Lee, 2006). McIntosh (2004) found that one of the most important facilitators during a discussion about emotional difficulties was a shared understanding with the listener and that the person listening had an understanding of the nature and extent of their difficulties.

Dennis and Chung-Lee (2006) observed that the way in which women interpret, negotiate and experience the social norms of motherhood depends on their relationships with other mothers. Research has found that women value the provision of social support as a treatment option for helping them cope with PND (McIntosh, 2004) and that support groups are often expressed as a treatment preference (Templeton *et al.*, 2003). However, it should be noted that studies have also found that some women can be apprehensive about such groups due to a fear of being overwhelmed by others' problems and the practical issues of attending a group with young children and families to care for (Ugarriza, 2004). In addition, support available from a husband, family or friends has been highlighted as important for women when recovering from PND (Dennis & Chung-Lee, 2006). Studies have shown that when mothers are suffering from emotional difficulties they require more emotional and practical support from their partners when caring for their children (Oates *et al.*, 2004; Rodrigues *et al.*, 2003) and this may be particularly important if there is an absence of extended family and mothers are socially isolated (Parvin *et al.*, 2004).

1.4.3 Section Summary

This research suggests that women tend not proactively to seek help, and that barriers to help-seeking involve maternal, familial and health professional factors. In addition common themes emerged relating to treatment preferences, with the majority of women preferring talking treatments and reluctant about pharmacological intervention. So far the only literature examining barriers to help-seeking in the postnatal period has been qualitative in design. Furthermore, few studies have examined the acceptability of PND treatment approaches and maternal preferences. This is a limitation, as acceptability of treatment strategies is important and can in itself be seen as a barrier to help-seeking as women will be reluctant to seek help for treatments they do not perceive as acceptable during this time in their life.

1.5 National and local context

Section 1.4 has looked at barriers to help-seeking and treatment preferences in the postnatal period. This section will focus on the guidelines in place to detect and minimise the impact of postnatal mental health problems both at a national and local level.

Over recent years, mental health in the perinatal period has moved up the health agenda. The Department of Health (DOH) highlighted the importance of preventing and detecting perinatal mental health in two documents: National Service Framework for Mental Health (DoH, 1999) and Women's Mental Health: Into the Mainstream (DOH, 2002) however, despite these two documents highlighting 'perinatal mental health' the focus still remains on PND.

The National Institute of Clinical Excellence (NICE) provides clinical management and service guidance with the aim of promoting good health and preventing and treating ill health. The guidelines for antenatal and postnatal mental health were updated in 2007 and seemed to be moving to focus on perinatal mental health rather than narrowly on PND. In the executive summary NICE (2007) state the policy covers 'all mental disorders, including anxiety disorders, depression, bipolar disorder, schizophrenia and postnatal psychotic disorders' (p.3). However, although the focus of the guidelines is split between the antenatal and the postnatal period, the emphasis remains heavily on PND. Where other mental health issues are commented upon, the focus is mainly on 'severe mental illness' such as bipolar mood disorder, puerperal psychosis with only limited reference to 'anxiety disorders', including general anxiety disorder, panic disorder and obsessive compulsive disorder. They highlight that there is little research on predictive factors for anxiety disorders and that there is no evidence presented for guidance on the use of effective treatments.

In the recommendations for the prediction and detection of perinatal mental health, the NICE (2007) guidelines focus on depression and recommend that at a women's first contact with services (pre or postnatally) health professionals ask the 'Whooley questions':

– 'during the past month, have you often been bothered by feeling down, depressed or hopeless?

And

– during the past month, have you often been bothered by having little interest or pleasure in doing things?

A third question should be considered if the woman answers ‘yes’ to either of the initial questions:

– is this something you feel you need or want help with?

There are several concerns about the use of these questions. Firstly, it is clear that these questions are focused towards the detection of depression and NICE (2007) point out that there is no evidence base for their use. Instead they are recommended for use as they are convenient and have face validity. Furthermore, as previously discussed, women experiencing difficulties in the postnatal period may find it difficult to discuss their distress with family, friends or health professionals. The adoption of screening questions focusing on depression may lead these women to be confused about their inability to cope and less likely to highlight difficulties for fear of being judged inadequate. As aforementioned, a key facilitator for women discussing emotional distress is a feeling of confidence that the person listening understands the nature and extent of the problem (McIntosh, 1993). If detection and screening focuses on PND then women suffering from other emotional difficulties may have little opportunity to communicate their concerns.

The NICE (2007) guidelines also recommend the use of a self-report measure in the detection of perinatal mental health problems. They recommend the Edinburgh Postnatal Depression Scale (EPDS) for use by health professionals with a cut-off score of 10. As its name suggests the EPDS was developed to screen for PND by Cox

et al. (1987) and, although it is the dominant tool for screening and detection, there remains discussion around its optimum timing for use, cut-off scores and its use with women from cultures other than white Caucasian (Alder *et al.*, 2003). They also highlight the Hospital Anxiety and Depression Scale and the General Health Questionnaire as potential screening measures. Although these appear more promising for screening of emotional disorders due to their identifying anxiety symptomatology, they are not validated for use in the postnatal population. SIGN (2002) provides clinical guidelines for Scotland with the aim of reducing inequality of health care through offering evidence-based recommendations for practice. These guidelines are slightly outdated, but will be mentioned in brief. They focus again on postnatal depression and for detection purposes also suggest the use of the EPDS (also recommending a cut-off score of 10) but do not advocate the use of screening questions.

Both NICE (2007) and SIGN (2002) make a number of recommendations for treatment. NICE (2007) highlights the importance of treating sub threshold symptoms of anxiety and depression and recommends primarily using a psychosocial intervention, such as a social support group, cognitive behaviour therapy (CBT) or interpersonal psychotherapy (IPT). The SIGN guidelines (2002) are in line with the recommendations from NICE (2007) and both policies highlight the importance of psychological interventions at this time due to the difficulties in medication management around the postnatal period.

Using national guidelines local healthcare groups produce protocols for practice and identify resources for implementation. Such protocols reflect the nature of need and priorities of an area. This research for this thesis is carried out in the West Lothian

area of Scotland and the practices in place to detect and minimise the impact of postnatal emotional distress will be discussed in more detail below. There are approximately 2200 births in West Lothian per year (General Register Office for Scotland, ¶ 5). Health visitors offer a service to all new mothers and are the profession most likely to deal with PND in the first line. Research suggests that many mothers with mild PND may never come into contact with other professions at this time, and any distress is managed primarily by the health visitor (Alder *et al.,* 2002). The general procedure for screening of postnatal mental health occurs at the mother's six-week check when the health visitor administers the EPDS. If women score above the recommended cut-off of 10, their health visitor offers them additional 'listening visits'.

Within West Lothian there are postnatal support groups available, which women can choose to attend. These offer social support but are not aimed at women experiencing difficulties. The groups cover a number of topics around child development and motherhood (such as weaning and postnatal fitness). In addition, one session of the group is devoted to a discussion on PND, which details what a woman should do if they, or someone they know are experiencing difficulty.

The Mental Health Care and Treatment (Scotland) Act (Scottish Executive, 2003) placed specific responsibility on health boards to ensure the appropriate provision of a service to allow a mother with postnatal mental health problems to be admitted to hospital accompanied by her child. As a direct consequence of this, a perinatal mental health service was set up spanning Lothian. This service has a role in inpatient and community work for women experiencing mental health problems in pregnancy or the postnatal period. Consequently, if a mother is identified as being at risk for a severe

mental health problem postnatally, for example, has a history of bipolar mood disorder, they will be offered specialist care throughout pregnancy and into the postnatal period. In addition, women experiencing the onset of affective disorders in pregnancy or the postnatal period can be referred to the service. However, women experiencing milder difficulties tend to be managed by the community midwife and health visitor, where the focus of mental health remains on depression in the postnatal period.

1.5.1 Section summary

Although perinatal mental health has moved up the health agenda, national guidelines still focus heavily on PND, particularly for detection and screening purposes in the community. As a consequence women suffering from mild to moderate anxiety and stress in the postnatal period, who are significantly distressed (but not depressed) may not be identified. Consequently, despite being in contact with a high number of services during the postnatal period, the opportunity to minimise the impact of emotional distress may be being missed.

There is a need for understanding the factors that place women in a vulnerable position for developing postnatal emotional distress, as these will aid health professionals to identify 'at-risk' women and provide early support. In addition although women are in touch with many services in the postnatal period, there is a need to identify those who are less likely to seek help for difficulties. This will allow services to reduce barriers to help-seeking and engage more women in effective treatments reducing the impact of postnatal emotional distress.

1.6 Rationale for current study and research questions

Sections 1.1 to 1.5 have presented the background to this study. This section will summarise this, to present the rationale for the study and research questions.

The evidence has been presented for widening the focus from PND to look at postnatal *distress*. PND is not a distinct entity from depression at other times and consequently it is suggested that women can suffer the full spectrum of non-psychotic disorders at this time in their lives (Matthey *et al.*, 2003). At policy level, NICE (2007) and SIGN (2002) primarily focus on the prediction and detection of depression and so an opportunity to identify and reduce the impact of other emotional disorders in the postnatal period is being missed. In an attempt to raise awareness of such difficulties, the first research question is:

1. what is the prevalence of emotional distress (depression, anxiety and stress) in a population of postnatal women in West Lothian?

Research has suggested that there are three main psychosocial risk factors for PND: psychiatric history, stressful life events and low levels of social support. In order to gain a greater understanding to facilitate screening and preventative measures the second research question is:

2. what are the psychosocial risk factors influencing postnatal emotional distress (depression, anxiety and stress)?

In addition, research suggests that many women suffering from PND do not seek help (Dennis & Chung-Lee, 2007). In order to gain a better understanding of what the barriers to help-seeking are and identify women who are less likely to seek help in the postnatal period the factor structure and reliability of a "barriers to help-seeking" measure will be assessed and the third research question asked:

3. what is the relationship between barriers to help-seeking, distress (depression anxiety and stress) and social support in the postnatal period?

The acceptability of interventions available to women for postnatal emotional distress has been highlighted as a potential barrier to help-seeking as women are less likely to seek-help for interventions they do not perceive as acceptable. In order to determine what interventions may be acceptable to women in West Lothian for postnatal difficulties the fourth question is asked:

4. what interventions may be acceptable to women for help with postnatal emotional difficulties in West Lothian?

2. METHODOLOGY

2.1 Overview

The background to the current study, research questions were presented in section 1. This section aims to describe the methodology of the research. It will cover the design of the study, ethical considerations and participants' characteristics. It will then detail the measures selected and the rationale for selection, including the development of a questionnaire to assess barriers to help-seeking. This section will also describe the procedure through which the data were collected and analysed.

2.2 Design

A quantitative design was selected for answering the research questions. A questionnaire was compiled to collect demographic information and contained self-report measures of symptomatology (depression, anxiety and stress) social support, life events and barriers to help-seeking (measures will be discussed further in section 2.5).

A between subjects design was used to examine differences between women with and without a significant level of symptomatology. A cross sectional design was employed to investigate: prevalence of and factors influencing depression, anxiety and stress; barriers to help-seeking and what intervention women would find acceptable for emotional distress in the postnatal period.

2.3 Ethical approval

The research was approved by the Lothian Research Ethics Committee (Appendix 1) and the Lothian Research and Development Team (Appendix 2). There were several ethical issues that required consideration, these will be discussed below.

It was felt that the researcher had a responsibility to respond to women who indicated that they were suffering from significant levels of distress. A procedure was set up which allowed any concerns to be raised and support options discussed. This procedure also allowed health visitors to be kept informed and GP's contacted if the researcher thought necessary. This procedure is explained in detail in section 2.6.

To allow this procedure to be followed participants' responses could not be anonymous. This raised two further ethical issues: the consent to hold personal information and the storage of this information. It was agreed that the sheet with the participants' personal information would be separated from the questionnaire. This could be matched to the questionnaire by an identifying number if required. This was explained to women in the participant information sheet (Appendix 3) and to make sure they understood and agreed to this procedure they were asked to sign a declaration of consent before completing the questionnaire (this can be found at the beginning of the questionnaire (Appendix 4).

As the questionnaire was designed to discuss topics that may have been distressing for some participants, the participant information sheet highlighted that, if they were affected by the content of the questionnaire, they could contact their Health visitor or

GP. It also stated that they could contact the researcher directly should they require advice on where to seek help.

A further ethical consideration was that women may think that failure to participate in the study would impact any current or future care. When Health visitors asked women if they wanted to participate in the study it was made explicit that it was entirely voluntary and that they were under no obligation to complete a questionnaire. The voluntary nature of the study was also made clear in the participant information sheet.

2.4 Participants

2.4.1 Inclusion and exclusion criteria

Women were included in the study if they were over 18 years of age and receiving routine postnatal care in the West Lothian region of Scotland. Women were excluded if they had a cognitive impairment or a learning disability.

2.4.2 Total sample

The total sample was made up of 132 women with a mean age of 29.6 years (SD 5.7)

2.5 Measures and rationale for their selection

A copy of each of all measures used in the questionnaire can be found in Appendix 4 (collated questionnaire pack)

2.5.1 Measure of distress

2.5.1.1 Depression Anxiety Stress Scales (DASS-21)

The DASS (Lovibond & Lovibond, 1995) is a 42 item questionnaire which is composed of three scales: 1) a depression scale that contains items that assess dysphoria, low self-esteem and lack of incentive; 2) an anxiety scale that measures fear responses as well as somatic and subjective symptoms of anxiety, and 3) a stress scale that contains items relating to nervous tension and irritability (Clara *et al.*, 2001).

The DASS was originally developed as a measure to maximally discriminate between depression and anxiety. However, during development the control items consistently formed a third group, the stress scale (Crawford & Henry, 2003). Depression and anxiety often occur co-morbidly and measures to assess them are frequently inter-correlated. In an attempt to clarify this relationship Clark and Watson (1991) developed the tripartite model. The tripartite model states that depression and anxiety have both common and unique features: depression is characterised by low positive affect and ahedonia, and anxiety by increased physiological hyperarousal. Additionally, the model proposes a third non-specific factor common to both depression and anxiety, which can be described as general distress. Although the DASS was not designed to parallel the tripartite model, its use of dimensional rather than categorical constructs of depression, anxiety and stress reflect the tripartite model.

Studies using the DASS in both clinical (Anthony *et al.*, 1998; Brown *et al.*, 1997; Clara *et al.*, 2001) and non-clinical samples (Crawford & Henry, 2003; Lovibond & Lovibond, 1995) have confirmed a three factor structure of depression, anxiety and stress. Crawford and Henry (2003) reported that the DASS has high levels of internal consistency when administered to clinical and non-clinical samples and correlated with other measures of depression and anxiety. Further studies have shown the DASS to have adequate convergent and discriminant validity and reliability (Anthony *et al.*, 1998; Brown *et al.*, 1997; Clara *et al.*, 2001; Lovibond & Lovibond, 1995).

The DASS-21 is a shortened version of the DASS. It has seven items for each of the depression, anxiety and stress scales. Respondents are asked to indicate (on a four point scale) the extent to which they experienced each state over the past week. The scores are then summed to give a total for each scale and are multiplied by two to allow interpretation with the DASS (Lovibond & Lovibond, 2004). Scores can be placed into categories: normal, mild, moderate, severe or extremely severe (Lovibond & Lovibond, 2004).

Like the DASS, studies have found the DASS-21 to have a three factor structure (Clara *et al.*, 2001; Henry & Crawford, 2005). The validity of the DASS-21 has been tested by correlating it with other measures (Henry & Crawford, 2005; Antony *et al.*, 1998). Details of these correlations can be found in **Table 2.1**.

Table 2.1: Validity of the DASS-21 subscales when correlated with other measures of depression & anxiety.

DASS-21 VALIDITY OF SUBSCALES WHEN CORRELATED WITH OTHER MEASURES			
Measure	**α Depression scale**	**α Anxiety scale**	**α Stress scale**
BDI	.79	.62	.69
BAI	.51	.85	.70
STAI-T	.71	.55	.68

Note: α = Cronbach's alpha

The DASS-21 has also been shown to have high levels of internal consistency across a range of samples: postnatal women, clinical and non-clinical samples. This information is detailed in **Table 2.2**.

Table 2.2: Internal consistency of the DASS-21 across a range of samples.

DASS-21 INTERNAL CONSISTENCY ACROSS A RANGE OF SAMPLES				
Study	**Sample**	**α Depression scale**	**α Anxiety scale**	**α Stress scale**
Miller *et al.*, (2006)	Postnatal women	.84	.77	.86
Henry and Crawford (2005)	Non-clinical	.88	.82	.90
Lovibond and Lovibond (2004)	Non-clinical	.81	.73	.81
Clara *et al.*, (2001)	Clinical	.92	.81	.88

Note: α = Cronbach's alpha

Miller *et al.*, (2006) demonstrated the utility of the DASS-21 for detecting depression, anxiety and stress in a group of postnatal women. They concluded that the DASS-21 was able to detect co-morbidity and mild symptomatology. In addition it was notable

for not relying on somatic changes (e.g., lack of sleep, poor concentration, weight loss) that can confound a diagnosis of depression in the postnatal period.

Henry and Crawford (2005) conclude that the DASS-21 has a number of advantages over the DASS as it is shorter yet still possesses adequate reliability. In addition, it omits items from the full DASS that have been identified as problematic and so has a cleaner latent structure.

The DASS-21 was selected due to its reliability, validity and brevity. It complements the cross-sectional and between group design of this study due to its dimensional conception of depression, anxiety and stress and by providing cut-off scores allowing classification according to severity. In addition it does not include somatic symptoms, which may be related to normal physiological changes associated with the postnatal period.

2.5.2 Measure of social support

2.5.2.1 Significant Others Scale (SOS)

The SOS (Power *et al.*, 1988) was developed as a measure to elicit information on the perceived form and function of social support. It looks at actual and ideal levels of social support for a range of key relationships in a person's life. The scale is not an exhaustive list; instead it is designed to examine the quality of an individual's most significant relationships. Two versions of the scale have been developed: one which specifies seven individuals (spouse/partner, mother, father, closest brother or sister,

other brother or sister, closest son or daughter and best friend); the other allows the respondent to choose which individuals to rate. In addition, Johnston *et al.*, (1995) state that the scale can be used more flexibly to vary the type and number of individuals included.

Power *et al.*, (1988) recommend the use of the short SOS, which is based on four functions or items, when other measures are administered. For this study the SOS was adapted to include social support from two specified individuals (husband or partner and mother) as well as providing the respondent with space to rate two other important people in their life available to provide them with support. The functions of social support are divided into 'emotional' (e.g., 'can you trust, talk to frankly and share feelings with X?') and 'practical' support (e.g., 'does X give you practical help?'). Items are rated on a seven-point scale from 'never' (1) to 'always' (7) and scores can be calculated at an individual level (e.g., mean actual emotional support from a husband or partner) or at an overall level (e.g., mean actual emotional support from all individuals). When scoring the SOS the higher the score the greater the frequency of support. Differences between the actual and ideal level of support can also be used to calculate a discrepancy score, which is the respondent's satisfaction with support from the individual. If no-one is available to provide support then the respondent is advised to leave the section blank.

Power *et al.*, (1988) demonstrated the concurrent validity of the SOS by using the General Health Questionnaire –28 (GHQ-28, Goldberg and Hillier, 1979) to categorise a clinical sample into three groups (symptom free, depressed and not depressed) and looked at their scores on the SOS. The results showed that the depressed cases had higher ratings for their ideal levels of emotional and practical

support than either the non-depressed or symptom free cases. These differences were also reflected in the discrepancy scores with the depressed cases having higher discrepancies for emotional and practical support than the other two groups. This shows that the SOS could discriminate between the groups.

Power *et al.,* (1988) demonstrated that the SOS has good test re-test reliability. They calculated the test-re-test reliability for 73 women over a six month period and found that the four summary functions (actual emotional, ideal emotional, actual practical and ideal practical) were significant (range .73-.83) for the constant role relationships. In addition, positive associations have also been reported for other samples: elderly people, Parkinson patients, Parkinson carers and undergraduate students ranging from .52-.85 (Johnston *et al.*, 1995).

Factor analysis indicated that the SOS has a three factors structure ('emotional support', 'practical support' and 'social fun'). However, Power *et al.*, (1988) argue that the 'social fun' factor is an aspect of 'practical support' and that overall their data reflect the 'actual-ideal' and 'emotional-practical' distinctions.

The SOS was selected based on its reliability and validity. In addition, it was selected due to its flexibility to be adapted, thus providing a brief measure able to capture the nature of significant relationships important in the postnatal period.

2.5.3 Measure of stressful life events

2.5.3.1 List of Threatening Experiences (LTE)

The measure of life events used was adapted from Brugha *et al.*,'s (1985) List of Threatening Experiences Questionnaire (LTE-Q). This questionnaire was developed to overcome difficulties in clinical application from the longer and more complex inventories available at the time. The researchers developed a list of 12 major life event categories by taking a history of life events from 310 men and women from the general population. They concluded that 12 out of the 67 event categories accounted for 77% of life events with an aetiologically significant rating of marked or moderate long-term threat.

Brugha and Cragg (1990) examined the test-retest reliability of the (LTE-Q) in 50 psychiatric patients over a six-month period and found a correlation between the timeframes of .88. In addition the score on the LTE-Q was also found to show good agreement with information from an informant. Concurrent validity was, calculated using a semi-structured life events interview and the Life Events and Difficulties Scales (LEDS). The LTE-Q showed high specificity and sensitivity with both.

The present study adapted the LTE-Q to include two items[2] from Cochrane and Robertson's (1972) Life Events Inventory (LEI) and a third item 'other', which allowed the respondent to specify a life event. Brown and Harris (1978) recommend that when using life event measures people respond better when given an 'anchor

[2] 'Increase in arguments with partner' and 'increase in behavior problems with children'

point'. Thus, participants were asked to indicate whether they had experienced any of life events since they found out they were pregnant with their youngest child. This time frame was selected as moderate to long term threats are considered to be aetiologically significant in relation to depression (Brown & Harris, 1978). If respondents indicated 'yes' to any event then they were asked to rate how distressing the event was on a four-point scale ('not at all distressing', 'somewhat distressing', 'moderately distressing' or 'extremely distressing'). This generated two scores: one for number of life events, the other for distress from life events.

The measure of stressful life events was collated based on Brugha *et al.*,'s (1985) LTE-Q due to its reliability, validity and brevity. Additional items were added from the LEI (Cochrane & Robertson, 1972) as they were felt to be significant stressors during the postnatal period.

2.5.4 Development of barriers to help-seeking measure

A review of the literature failed to find a measure of barriers to help-seeking suitable for use within the postnatal population. The majority of measures looking at barriers to help-seeking were found in the health psychology literature and are specific to that area. None was deemed adaptable for the purposes required by this study.

A barriers to help-seeking measure was developed. The items for the questionnaire were devised from a number of sources: previous qualitative literature, interviews with postnatal women and expert opinion. Dennis and Chud-Lee (2006) conducted a quantitative systematic review looking at postnatal depression and help-seeking and

pulled together the literature to identify a number of key themes (maternal factors, familial factors and health professional factors).

An in-depth interview was conducted with one postnatal woman from the community who had never experienced mental health difficulties. This interview generated a number of categories, which were later combined with information from the previous literature to generate a list of statements. Following this a focus group was set up through a voluntary agency working with women suffering from postnatal depression. The agency sent out twenty letters to women who were on a list indicating that they would consider being involved in future research. Six of the women agreed to participate in a focus group; however, due to work commitments, illness and childcare arrangements only one woman could attend on the day. In addition, the researcher received a detailed letter from one mother who was unable to attend outlining what she believed were the main barriers to help-seeking for postnatal mental health.

An in-depth interview was conducted with the woman who was able to attend. This began in an unstructured way, almost indistinguishable from spontaneous conversation then progressed to be more structured when the researcher summarised the discussion and highlighted the list of possible statements generated from the literature review and the previous interview. The woman gave suggestions around wording but felt that all questions were relevant and meaningful. Following this interview the amended statements were taken to a consultant clinical psychologist, community psychiatric nurse, health visitor and occupational therapist all working within a perinatal mental health service. From their clinical observations they agreed that the items captured all aspects of potential barriers to help-seeking and would be acceptable and suitable for use in this population.

A five point Likert scale would be used to construct the questionnaire with response options from 1 (disagree) to 5 (agree). This type of ordinal scale requires the respondent to make a decision about their level of agreement with a statement. The number circled becomes the value for each response and the total score for perceived barrier to help-seeking derived when the scores are summed. Half the items in the scale were phrased positively and half negatively to reduce the likelihood of a response bias, encouraging participants to think about each item.

The barriers to help-seeking questionnaire was pre- piloted with five postnatal women and amendments were made. The measure was then piloted with thirty postnatal women from the voluntary organisation. No further amendments were needed and the questionnaire was collated into the questionnaire pack to be given to postnatal women in West Lothian. The factor structure of the barriers to help-seeking measure and reliability is detailed in the results (Section 3.9)

2.5.5 Other information collected

2.5.5.1 Demographic information

Demographic information was collected for age, marital status, education, employment status, parity, age of youngest child and psychiatric history.

2.5.5.2 Current support available

Respondents were asked what current support they were receiving from professionals. This was asked in order to assess whether information obtained about level of distress warranted further action and what professionals were involved.

2.5.5.3 Support options considered

Respondents were asked the question 'If you wanted support for postnatal emotional issues (such as low mood or anxiety), which would you consider?' and given a list of options to choose from. This list included options that were currently available in West Lothian as well as options that could potentially be developed.

2.5.6 Design of full questionnaire

The aforementioned measures and additional demographic information were compiled along with a cover page detailing the necessary contact details and declaration of consent put together with a front cover page. The information was kept to a single page and placed at the front of the questionnaire in order that it could be easily removed and stored separately. Both the questionnaire and front sheet were numbered for purposes of tracing if required. The layout of the full questionnaire can be found in Appendix 4.

2.6 Procedure

Discussions were held with the lead health visitor early in the planning process to discuss the research. Before finalising the methodology researcher attended health

visitor meetings to discuss practicalities and ensure that the research would be possible and acceptable to the health visitors in the allotted time frame. Once ethical approval was granted the researcher met with teams of health visitors to give informal presentations about the study, this also gave them an opportunity to ask questions or raise any concerns. The practice managers for the health centres out of which the health visitors were working were also contacted so they and the GP's were aware of the research and could raise any concerns.

Following this the researcher approached health visitors on an individual basis to discuss practicalities at a local level. This also gave the health visitors a further opportunity to ask questions. Regular contact was maintained throughout the study period with health visitors and the lead health visitor.

Health visitors asked women attending a baby clinic if they would participate in the research. If they agreed they were introduced to the study researcher and given a questionnaire pack, which included a participant information sheet, consent sheet and questionnaire. At this point they had the opportunity to ask questions, complete a questionnaire or withdraw from participation. As mothers were attending for a baby clinic they had children with them and so could not always complete the questionnaire at that time. Under these circumstances mothers took partially completed questionnaires home and returned them to the health visitor the following week. To allow women opportunity to complete questionnaires the researcher required space for the women to sit. Due to the days that baby clinics were held and availability of rooms in local health centres some areas were less able to accommodate the research.

As highlighted in section 2.3 the researcher had a responsibility to respond to women indicating a significant level of distress. This was determined by the cut-off on the DASS-21 ('moderate or above'). The researcher made initial contact by telephone, which allowed concerns to be raised and support options discussed. In instances when telephone contact could not be made with the respondent their case was discussed with their health visitor, who either contacted them by phone, through the baby clinic or sent written communication. As discussed with the ethics committee, if concern regarding the respondent were high then the researcher would have to act within her duty of care and contact the responsible GP. Throughout the study this action was not required. All women were aware of this procedure as it was outlined in the participant information sheet (Appendix 3).

2.7 Power analysis

Power calculations were based on Cohen's (1992) recommendations and were used to inform the sample size of the study. Multiple regression with five independent variables requires a minimum sample size of around 97 to find a medium effect size at the 95% significance level. A medium effect size was chosen as this was found by a previous study, which looked at factors influencing the prevalence of antenatal distress (Wright, 2007). This information facilitated a discussion with health visitors to ensure that the sample size required for the study could be met within the allocated timeframe.

2.8 Statistical analysis

The data were analysed using Statistical Packages for Social Sciences (SPSS version 14). Frequency and descriptive statistics were presented for the demographic variables and to identify the prevalence of depression, anxiety and stress. The normality of the data was explored by looking at skewness and kurtosis through histograms and the Kolmogorov-Smirnov statistic. As the data were skewed it was transformed using the log, square root and reciprocal transformations. However, it remained skewed and so the analysis was performed on the non-transformed data.

Parametric statistics were initially selected to test the differences between groups as they are more powerful statistics (Field, 2003). When the assumptions of parametric tests were violated non-parametric alternatives were used. Non-parametric chi-square and Fisher's exact tests were used to test differences between categorical variables.

Multivariate analysis was used to examine factors influencing postnatal emotional distress. Prior to the multiple regression Pearson's correlations were examined and the sequential enter method selected to allow the independent variables to be entered in a pre-arranged order based on a theoretical model.

Conducting multiple comparisons within a study increase the risk of a type 1 error, finding significance by chance. Consequently in these situations Field (2003) suggests selecting a more stringent alpha level to protect against this. However, multivariate analysis protects against the inflated chance of type 1 errors due to multiple comparisons. Due to this the alpha level was retained at .05 throughout this study, which allowed all potential significant variables to be explored.

Principal component analysis with varimax rotation was conducted on the barriers to help-seeking measure to determine the underlying factor structure of the questionnaire. Questions were removed if they did not load highly on the underlying structure. The reliability of the measure was also assessed using Cronbach's alpha. Following this to identify who is unlikely to seek-help, Pearson's correlations were run between the barriers to help-seeking score, social support and distress.

3. RESULTS

3.1 Overview

The methodology of current study along with the development of the "barriers to help-seeking questionnaire" was reported in section 2. This section will present the findings of the research. The characteristics of the total sample are explored: demographics, symptomatology, level of social support and life events. The difference in demographics, and social support will be explored in women with and without significant levels of symptoms. The results will then be expanded using multivariate analysis to look at risk factors for postnatal emotional distress. The psychometric properties of the "barriers to help-seeking" measure will be explored and barriers to help-seeking in the postnatal population presented. The relationship between barriers to help-seeking, symptomatology and social support will also be explored. The final section of the results shows the desired support options as reported by postnatal women in West Lothian.

3.2 Response rate and sample size

One hundred and thirty two women completed the questionnaire from health centres across West Lothian. Eighty women attending Carmondean Health Centre were asked to complete a questionnaire. Sixty-one were completed indicating a 76 per cent response rate. Sixty women attending Dedridge Health Centre were asked to complete a questionnaire. Forty-one were completed indicating a 68 per cent response rate. Twenty-five women attending East Calder Health Centre were asked to complete a questionnaire. Seventeen were completed indicating a 68 per cent

response rate. Twelve mothers attending Howden Health Centre were asked to complete a questionnaire. Seven were completed indicating a 58 percent response rate and, 13 mothers attending Craigshill Health Centre were asked to complete a questionnaire. Six were completed indicating a 46 per cent response rate.

3.3 Demographic characteristics of total sample

Demographic information was completed by all women (N=132). The following demographic characteristics are presented in a summary **Table 3.1** at the end of this section.

3.3.1 Maternal age

The mean age of the total sample was 29.6 years (SD 5.7; range 18 to 45; median 29.0).

3.3.2 Age of youngest child

The mean age of the youngest child was 22.9 weeks (SD 12.9; range 6 to 52; median 21.5).

3.3.3 Psychiatric history

One hundred and ten women (83 per cent) reported that they had no previous psychiatric history. Twenty-two women (17 per cent) indicated that they had previously suffered a mental health problem.[3]

[3] Details of psychiatric history can be found in appendix 5

3.3.4 Parity

Two per cent (N=3) of the mothers in the sample indicated that they had twins, 98 per cent (N=129) of the sample had single births.

Forty-three per cent (N=57) of the sample indicated that they had two children, 15 per cent (N= 20) had three children, 5 per cent (N=7) four children and under 1 per cent (N=1) of the sample population had five, six or seven children.

3.3.5 Marital status

Eighty-nine percent (N=118) of the total sample were married or co-habiting, 11 per cent were single (N=14). None of the sample indicated that they were separated from their partner, divorced or widowed.

3.3.6 Ethnic origin

Ninety-five per cent (N= 125) of the total sample were of white ethnic origin, 2 per cent (N=3) African and less than 1 per cent (N=1) from either Pakistani, Chinese, mixed background or 'other' ethnic group. Details of 'other' ethnic group were not provided.

3.3.7 Employment status

Forty-five per cent (N=59) of the total sample were on maternity leave, 26% per cent (N=20) looked after the home or family, 16 per cent (N=21) were in part-time employment, 15 per cent (N=20) in full-time employment, 2 per cent (N=3) were unemployed, 2 per cent (N=2) classified themselves as a student or in further

education and less than 1 per cent (N=1) selected 'other' for their employment status. Details of 'other' employment status were not provided.

3.3.8 Education level

Forty-three per cent (N=57) of the total sample indicated that they had standard grade/GCSE qualifications, 21 per cent (N=28) had a university degree, 16 per cent (N=21) Higher /A-Level qualifications and 8 per cent (N=10) indicated that they had a college diploma. Twelve per cent (N=16) of the total sample indicated that they had 'other' qualifications[4].

3.3.9 Summary table of demographics

Table 3.1 summarises the demographic characteristics of the total sample of 132 women.

[4] Details of 'other' qualifications specified and frequencies can be found in appendix 6

Table 3.1: Summary of Demographic characteristics of total sample of 132 postnatal women in West Lothian.

	Mean	SD	Minimum	Maximum	Median
Age of mother	29.6	5.7	18	49	29.0
Age of youngest child in weeks	22.9	12.9	6	52	21.5
		N		%	
Psychiatric history					
Yes		22		17	
No		110		83	
Parity					
Twins		3		2	
Single births		129		98	
One child		45		34	
Two children		59		45	
Three children		20		15	
Four children		7		5	
Five children		1		≤1	
Six children		1		≤1	
Seven children		1		≤1	
Marital status					
Married or cohabiting		118		89	
Single		11		14	
Ethic origin					
White		125		95	
African		3		2	
Pakistani		1		≤1	
Chinese		1		≤1	
Mixed		1		≤1	
Other ethnic group		1		≤1	
Employment status					
Maternity leave		59		45	
Looking after home or family		26		20	
Part-time employment		21		16	
Full-time employment		20		15	
Unemployed		3		2	
Student or further education		2		2	
Other employment status		1		≤1	
Education level					
Standard Grade/GCSE		57		43	
University Degree		28		21	
Higher/A-Levels		21		16	
College Diploma		10		8	
Other Qualifications		16		12	

3.4 Symptomatology in total sample

3.4.1 Depression symptomatology

Ninety-nine per cent of respondents (N=131) from the total sample completed the DASS-21 depression scale. Scores on the DASS-21 are multiplied by two to ensure consistent interpretation with the full DASS-42 scale (Lovibond & Lovibond, 2004). The mean depression score was 4.2 out of a possible 42 (SD 7.4, Range 0 to 36, median 2.0). See **Table 3.2** below.

Table 3.2: Descriptive statistics of DASS-21 depression scale.

DASS-21 DEPRESSION SCORES	
Mean	4.3
SD	7.4
Minimum	0
Maximum	36
Median	2.0
Skewness	2.696
Standard Error of Skewness	0.212
Kurtosis	7.625
Standard Error of Kurtosis	0.420

When examining the DASS -21 depression scores in **Figure 3.1** it can be seen that they are skewed. The values of Skewness (2.696) and Kurtosis (7.625) indicate a negatively skewed leptokurtic[5] distribution. A Kolmogorov-Smirnov test was significant $D(131) = 0.29$, $p \leq 0.001$, indicating a non-normal distribution.

[5] Peaked distribution with most values towards the tail end (Field, 2005)

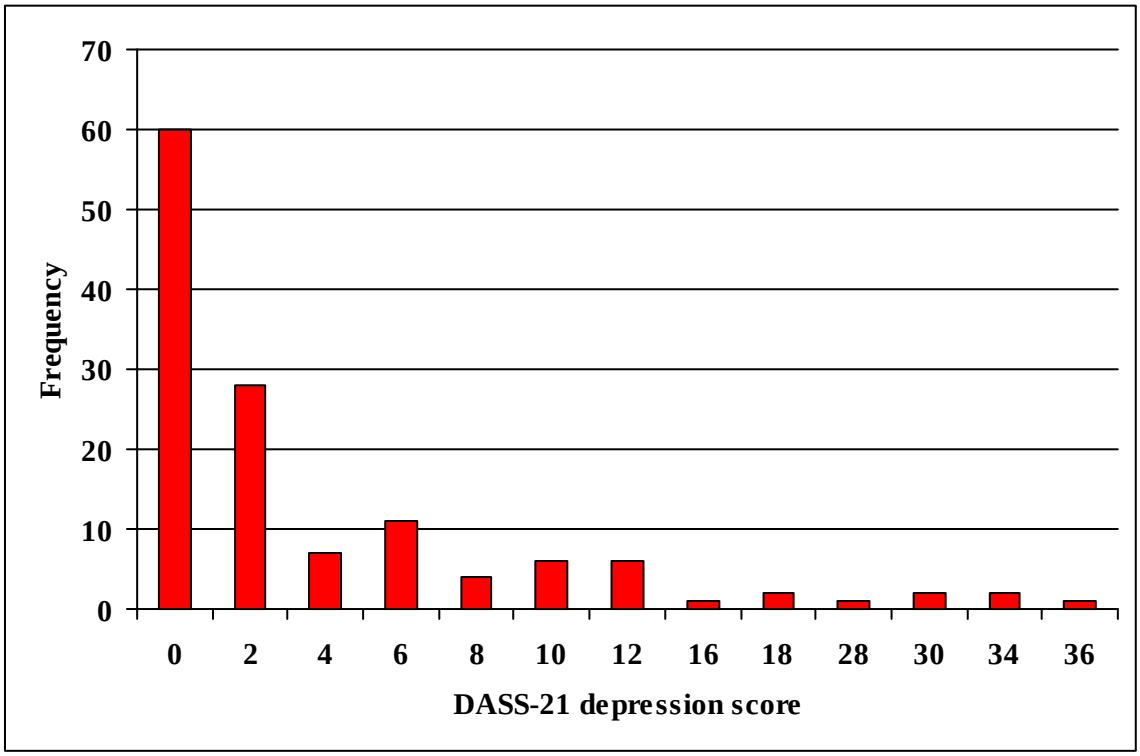


Figure 3.1: The distribution of DASS-21 depression scores.

The DASS-21 depression scale has several cut-off scores that range from 'mild' (a score of 10 or above) to 'extremely severe' (a score of 28 or above). Eighty-four per cent of the sample (N=110) scored below the 'mild' cut-off. Sixteen per cent (N=21) scored above the cut-off, 9.2 per cent of the sample scored in the 'mild or above' range (N=21), 2.3 per cent (N=3) scored in the 'moderate or above' range, none scored in the 'severe or above' range and 4.6 per cent (N=6) scored in the 'extremely severe or above' range. In addition, four women (19 per cent) described the symptomatology of 'pure depression' scoring above the cut-off for depression subscale but not the anxiety or stress scales. One woman described symptoms of co-morbid anxiety and depression and seven women scored above the cut-off on the anxiety, depression and stress scales.

3.4.2 Anxiety symptomatology

Ninety-nine per cent of respondents (N=131) from the total sample completed the DASS-21 anxiety scale. The mean anxiety score was 2.9 out of a possible 42 (SD 5.9, Range 0 to 36, median 0). See **Table 3.3** below.

Table 3.3: Descriptive statistics of DASS-21 anxiety scale.

DASS-21 ANXIETY SCORES	
Mean	2.9
SD	5.9
Minimum	0
Maximum	36
Median	0
Skewness	3.537
Standard Error of Skewness	0.212
Kurtosis	13.808
Standard Error of Kurtosis	0.420

When examining the DASS -21 anxiety scores in **Figure 3.2** it can be seen that they are skewed. The values of Skewness (3.537) and Kurtosis (13.808) indicate a negatively skewed leptokurtic distribution. A Kolmogorov-Smirnov test was significant $D(131) = 0.31$, $p \leq .001$, indicating a non-normal distribution.

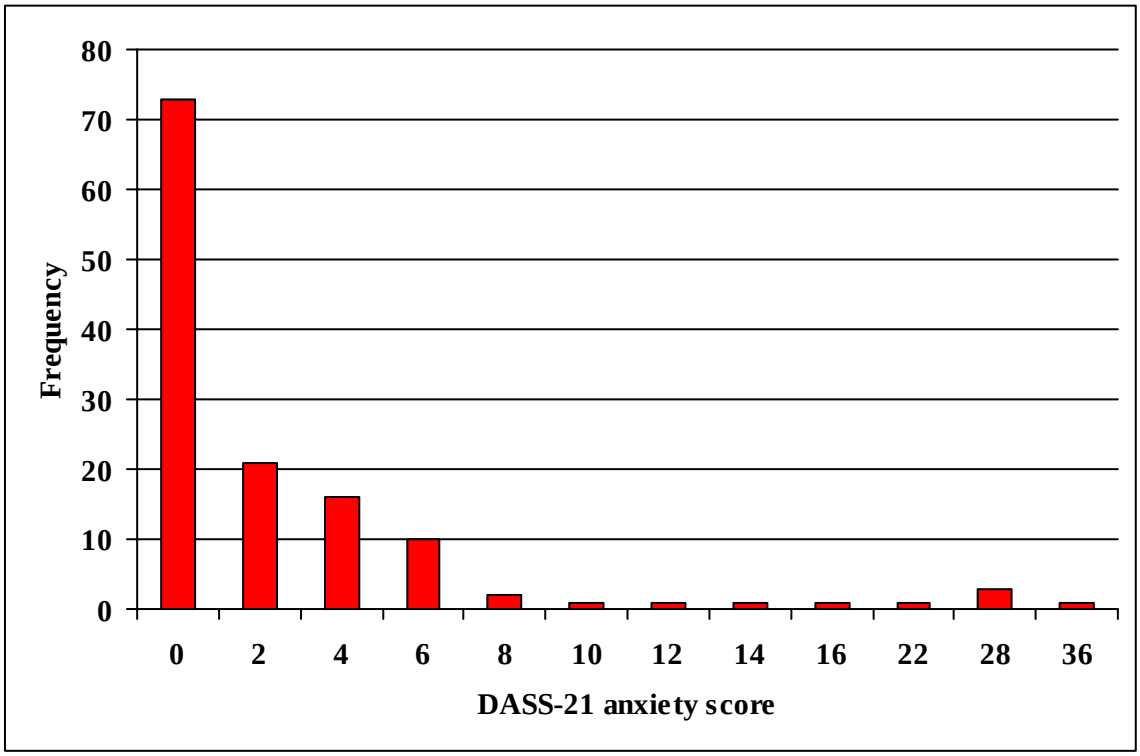


Figure 3.2: The distribution of DASS-21 anxiety scores.

The DASS-21 anxiety scale has several cut-offs that range from 'mild' (a score of 8 or above) to 'extremely severe' (a score of 20 or above). Eighty-one point six per cent (N=120) of the sample scored below the 'mild' cut-off. Eight point four per cent (N=11) of the sample scored above the cut-off, 2.3 per cent (N=3) scored in the 'moderate or above' range, none scored in the 'severe or above' range and 4.5 per cent (N=6) scored in the 'extremely severe or above' range. Only one of the women described symptoms of 'pure' anxiety scoring above the cut-off on the anxiety scale only.

3.4.3 Stress symptomatology

Ninety-nine per cent of respondents (N=131) from the total sample completed the DASS-21 Stress scale. The mean stress score was 8.8 out of a possible 42 (SD 9, Range 0 to 42, median 6.0). See **Table 3.4** below. .

Table 3.4: Descriptive statistics of DASS-21 stress scale.

DASS-21 STRESS SCORES	
Mean	8.8
SD	9
Minimum	0
Maximum	42
Median	6.0
Skewness	1.598
Standard Error of Skewness	0.212
Kurtosis	2.686
Standard Error of Kurtosis	0.420

When examining the DASS -21 stress scores in **Figure 3.3** it can be seen that they are skewed. The values of Skewness (1.598) and Kurtosis (2.686) indicate a negatively skewed leptokurtic distribution. A Kolmogorov-Smirnov test was significant $D(131) = 0.18$, $p \leq .001$, indicating a non-normal distribution.

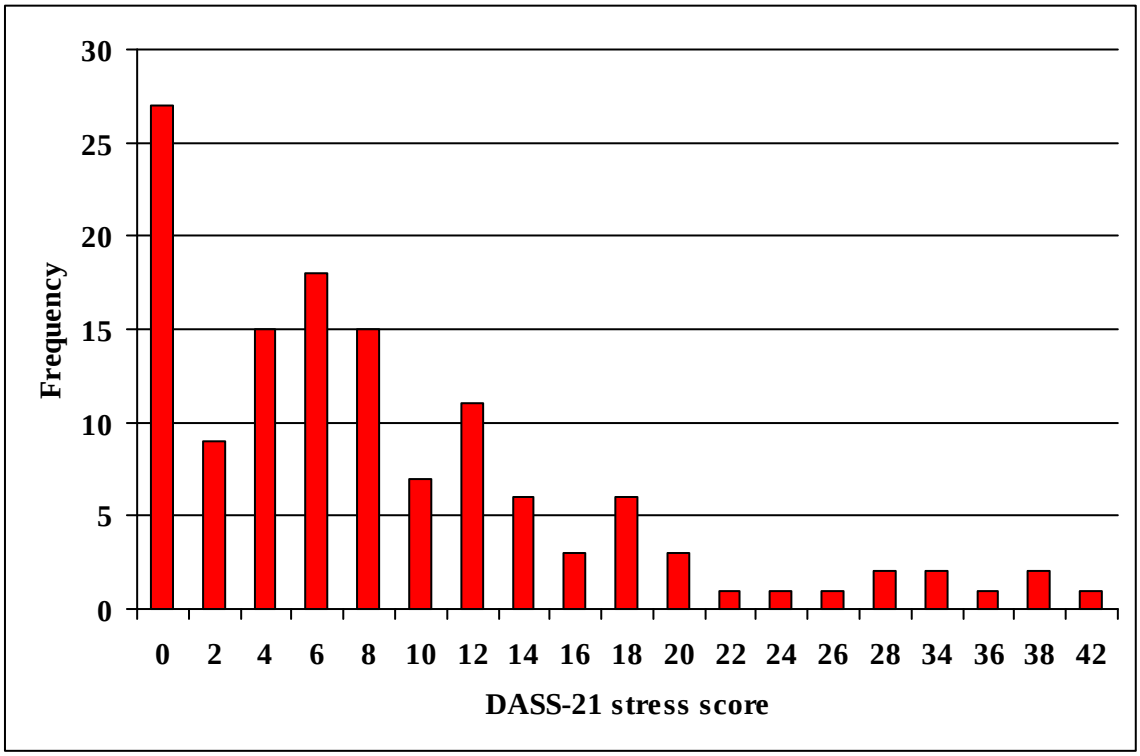


Figure 3.3: The distribution of DASS-21 stress scores.

The DASS-21 stress scale has several cut-offs that range from 'mild' (a score of 15 or above) to 'extremely severe' (a score of 34 or above). Eighty-two point four per cent (N=108) of the sample scored below the 'mild' cut-off. Seventeen point six per cent (N=23) scored above the cut-off, 6.9 per cent (N=9) of the sample scored in the 'mild or above' range, 3.8% (N=5) scored in the 'moderate or above' range, 2.3 per cent (N=3) scored in the 'severe or above' range and 4.5 per cent (N=6) scored in the 'extremely severe or above' range. Seven women described 'pure' stress symptomatology scoring above the cut-off on the stress subscale only.

3.4.4 Non-normal distribution and outliers

The data was transformed using the log transformation (log (*X*í) + 1), however remained non-normal. It was then transformed using the square root and reciprocal transformation but failed to be corrected. Due to this analysis was performed on non-transformed data. Outliers in the sample were examined; however, these were thought to be clinically relevant cases and thus were included in the analysis.

3.4.5 Summary of symptomatology of total sample

Section 3.4 has presented the symptomatology of the total sample, in summary:

- 16 per cent of postnatal women indicated that they had 'mild or above' depressive symptomatology as measured by the DASS-21 depression scale
- 8.4 per cent of postnatal women indicated that they had 'mild or above' anxiety symptomatology as measured by the DASS-21 anxiety scale
- 17.6 per cent of postnatal women indicated that they had 'mild or above' stress symptomatology as measured by the DASS-21 stress scale

3.5 Social support in total sample

Social support in the total sample was measured by the SOS. Ninety-nine point five per cent (N=130) of respondents completed the SOS.

3.5.1 Social support from husband or partner

One hundred and twenty-three respondents (94.6 per cent) completed the husband or partner section of the SOS, 7 (5.4 per cent) respondents left this section blank indicating that they did not have a husband or partner available to provide support.

The mean actual emotional support, ideal emotional support and emotional discrepancy scores were 12.5, 13.3 and 0.97 (out of a total of 14). The mean actual practical support, ideal practical support and practical discrepancy scores were 11.9, 13.0 and 1.36 (out of a total of 14). Refer to **Table 3.5**.

Table 3.5: Emotional and practical support scores for husband or partner.

SOS SCORES –HUSBAND OR PARTNER				
	Mean	**SD**	**Minimum**	**Maximum**
Actual Emotional	12.5	1.90	6	14
Ideal Emotional	13.3	1.22	8	14
Emotional Discrepancy	0.97	1.50	0	6
Actual Practical	11.9	2.43	4	14
Ideal Practical	13.0	1.23	9	14
Practical Discrepancy	1.36	1.66	0	8

3.5.2. Social support from mother

One hundred and twenty respondents (92.3 per cent) completed the mother section of the SOS, 10 (7.7 per cent) respondents left this section blank indicating that they did not have a mother available to provide support.

The mean actual emotional support, ideal emotional support and emotional discrepancy scores were 11.29, 12.60 and 1.38 (out of a total of 14). The mean actual practical support, ideal practical support and practical discrepancy scores were 10.76, 12.08 and 1.45 (out of a total of 14). Please refer to **Table 3.6**.

Table 3.6: Emotional and practical support scores for mother.

SOS SCORES –MOTHER				
	Mean	**SD**	**Minimum**	**Maximum**
Actual Emotional	11.29	2.93	2	14
Ideal Emotional	12.60	1.94	4	14
Emotional Discrepancy	1.38	2.05	0	10
Actual Practical	10.76	3.03	2	14
Ideal Practical	12.08	2.15	5	14
Practical Discrepancy	1.45	2.07	0	8

3.5.3 Social support from others

The SOS left space for the respondent to identify two 'other' people who were important in their life.

One hundred and eighteen (90.8 per cent) women identified one other, 12 (9.2 per cent) women left this blank indicating that they did not have an 'other' available.

For the first 'other' identified the mean actual emotional support, ideal emotional support and emotional discrepancy scores were 11.93, 12.92 and 1.04 (out of a total of 14). The mean actual practical support, ideal practical support and practical discrepancy scores were 11.14, 12.15 and 1.08 (out of a total of 14).

One hundred and five women (80.8 per cent) identified a second 'other' available to provide social support, 25 (19.2 per cent) women left this blank indicating that they did not have a second 'other' available to provide them with support.

For the second 'other' identified the mean actual emotional support, ideal emotional support and emotional discrepancy scores were 11.68, 12.62 and 1.00 (out of a total of 14). The mean actual practical support, ideal practical support and practical discrepancy scores were 10.92, 12.01 and 1.20 (out of a total of 14). Refer to **Table 3.7**.

Table 3.7: Emotional and practical support scores from two 'other' people identified.

SOS SCORES –'OTHERS AVAILABLE'				
First 'other' (N=118)	**Mean**	**SD**	**Minimum**	**Maximum**
Actual Emotional	11.93	2.32	4	14
Ideal Emotional	12.92	1.40	8	14
Emotional Discrepancy	1.04	1.81	0	10
Actual Practical	11.14	2.83	4	14
Ideal Practical	12.15	1.94	7	14
Practical Discrepancy	1.08	1.90	0	10
Second 'other'(N=105)				
Actual Emotional	11.68	2.69	2	14
Ideal Emotional	12.62	1.51	6	14
Emotional Discrepancy	1.00	1.91	0	12
Actual Practical	10.92	2.98	2	14
Ideal Practical	12.01	1.96	6	14
Practical Discrepancy	1.20	2.09	0	12

3.5.3.1 Other sources of support available

The number of women who identified an 'other' and a second 'other' available to provide support was pooled (N=223[6]) to identify who these people were. One hundred and three respondents (46.2 per cent) identified their friend and 79 (35.4 per cent) their sister. Fifteen (6.7 per cent) women identified their mother-in-law as another source of support. Seven (3.1 per cent) women stated their 'other' source of support to be their father and 7 (3.1 per cent) their brother. A further Fifteen women (6.7 per cent) identified other people available to provide them with social support, this is detailed in **Table 3.8**.

Table 3.8: 'Other' sources of support available.

'OTHER' SOURCES OF SUPPORT		
	N	**%**
Friend	103	46.2
Sister	79	35.4
Mother-in-law	15	6.7
Father	7	3.1
Brother	7	3.1
Sister-in-law	5	2.2
Aunty	5	2.2
Cousin	2	≤1
Grandmother	1	≤1
Older daughter	1	≤1

[6] N=223 (118 women identified an 'other' + 105 women identified a second 'other' available to provide support)

3.5.4 Total support scores

Total support scores are calculated from all sources of support; mother, husband (or partner) and two 'other' sources. The mean total actual emotional support, ideal emotional support and emotional discrepancy scores were 5.9, 6.4, and 0.5, respectively. The mean actual practical support, ideal practical support and practical discrepancy scores were 5.6, 6.2 and 0.6, respectively. These figures are presented in **Table 3.9**.

Table 3.9: Total practical and emotional support scores as measured by the SOS.

TOTAL PRACTICAL & EMOTIONAL SUPPORT SCORES				
	Mean	**SD**	**Minimum**	**Maximum**
Total emotional support				
Actual	5.9	0.9	3.0	7.0
Ideal	6.4	0.6	4.0	7.0
Discrepancy	0.5	0.6	0.0	3.0
Total practical support				
Actual	5.2	1.1	2.5	7.0
Ideal	6.2	0.7	4.2	7.0
Discrepancy	0.6	0.7	0.0	3.2

3.5.5 Summary of social support scores

Table 3.10 presents a summary of social support scores for the sample.

Table 3.10: Summary of social support scores for the total sample.

SUMMARY OF SOCIAL SUPPORT SCORES		
	Mean	**SD**
Actual Emotional		
Husband or partner	12.50	1.90
Mother	11.29	2.93
'Other 1'	11.93	2.32
'Other 2'	11.68	2.69
Ideal Emotional		
Husband or partner	13.30	1.22
Mother	12.60	1.94
'Other 1'	12.92	1.40
'Other 2'	12.62	1.51
Emotional Discrepancy		
Husband or partner	0.97	1.50
Mother	1.38	2.05
'Other 1'	1.04	1.81
'Other 2'	1.00	1.91
Actual Practical		
Husband or partner	11.90	2.43
Mother	10.76	3.03
'Other 1'	11.14	2.83
'Other 2'	10.92	2.98
Ideal Practical		
Husband or partner	13.00	1.23
Mother	12.08	2.15
'Other 1'	12.15	1.94
'Other 2'	12.01	1.96
Practical Discrepancy		
Husband or partner	1.36	1.66
Mother	1.45	2.07
'Other 1'	1.08	1.90
'Other 2'	1.20	2.09

3.6 Life events of total sample

3.6.1 Total number of life events

One hundred percent of respondents (N=132) completed the life events measure. The number of life events an individual experienced since they found out they were pregnant with their youngest child was calculated. The mean number of life events was 1.68 (SD 1.56 Range 0-7; median 1.00). Descriptive statistics are presented in **Table 3.11.**

Table 3.11: Descriptive statistics for number of life events.

NUMBER OF LIFE EVENTS	
Mean	1.68
SD	1.56
Minimum	0
Maximum	7
Median	1.00
Skewness	1.396
Standard Error of Skewness	0.211
Kurtosis	2.257
Standard Error of Kurtosis	0.149

Figure 3.4 shows the distribution of the number life events experienced by the total sample.

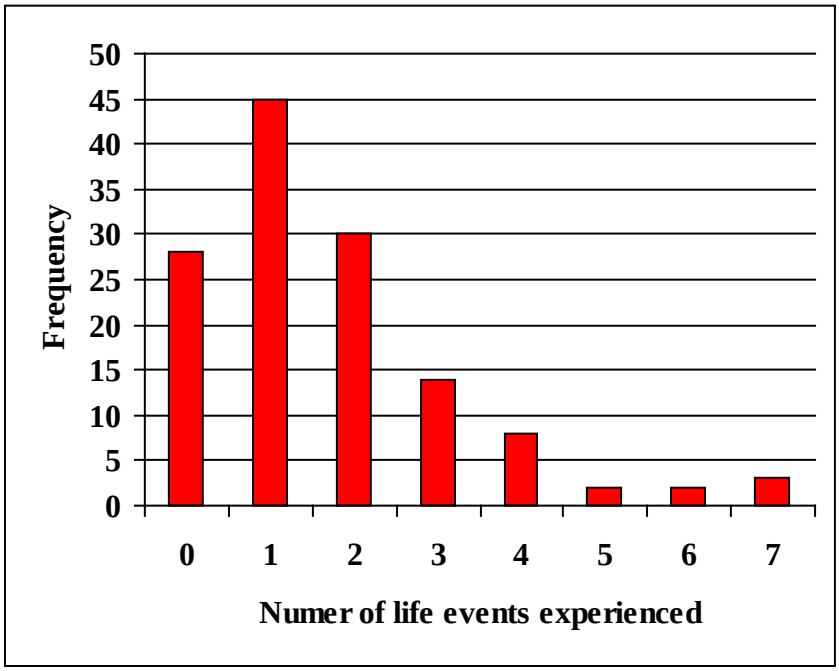


Figure 3.4: Distribution of number of life event experienced.

3.6.2 Distress from life events

Distress caused by life events was summed to give a total (life event) distress score. With higher scores indicating more distress. The mean score of distress from life events was 2.89 (SD 3.48; range 0-16; median 2.00). Descriptive statistics are presented in **Table 3.12**.

Table 3.12: Descriptive statistics for distress from life events.

DISTRESS FROM LIFE EVENTS	
Mean	2.89
SD	3.48
Minimum	0
Maximum	16
Median	2.00
Skewness	1.667
Standard Error of Skewness	0.211
Kurtosis	2.684
Standard Error of Kurtosis	0.419

Figure 3.5 shows the distribution of the distress from life events experienced by the total sample.

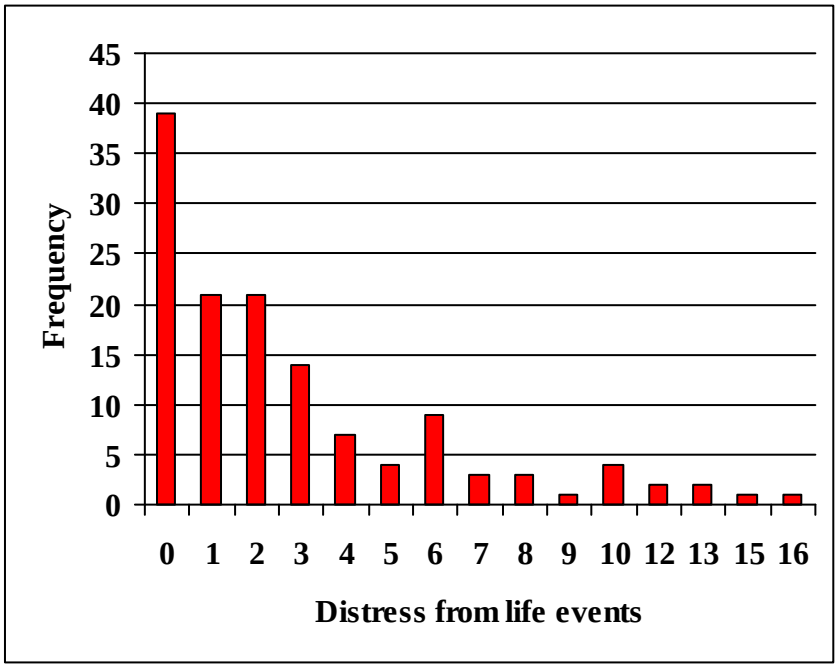


Figure 3.5: Distribution of distress from life events.

3.6.3 Type of life events experienced

The most common life events experienced by the women in the sample were moving house (N=32), having an increase in arguments with their partner (N=27) and the death of close friend, uncle, aunt or cousin (N=25). Frequencies of responses to life event items can be found in **Table 3.13**.

Table 3.13: Frequency of response to life events.

FEQUENCY OF RESPONSES TO LIFE EVENTS	NO		YES	
	Freq	**%**	**Freq**	**%**
1. Have you had a serious illness or injury?	125	94.7	7	5.3
2. Has a close relative had a serious illness or injury?	109	82.6	23	17.4
3. Has there been a death in your close family? (mother, father, brother, sister, wife, husband, son or daughter)	118	89.4	14	10.6
4. Has there been a death of a close friend, uncle, aunt or cousin?	107	81.1	25	18.9
5. Have you had a separation due to marital difficulties?	129	97.7	3	2.3
6. Have you broken off a steady relationship?	123	93.2	9	6.8
7. Have you had a serious problem with a close friend, neighbour or relative?	112	84.8	20	15.2
8. Sine you found out you were pregnant has there been a period during which you were unemployed or seeking work for more than one month?	123	93.2	9	6.8
9. Have you been sacked from you job?	131	99.2	1	< 1
10. Have you had a major financial crisis?	131	99.2	1	< 1
11. Have you had any problems with the police or have you had a court appearance?	129	97.7	3	2.3
12. Have you had any valuables lost or stolen?	130	98.5	2	1.5
13. Have you had an increase in arguments with your partner?	105	79.5	27	20.5
14. Have you had trouble or behaviour problems with children?	115	87.1	17	12.9
15. Have you moved house?	100	75.8	32	24.2
16. Has an immediate family member had difficulties with drugs or alcohol?	120	90.9	12	9.1
17 Other event[7]	126	95.5	6	4.5

[7] Details of 'other' life events experienced can be found in Appendix 7.

3.6.3 Summary of life events of total sample

Section 3.6 presents the results for the life events scores of the total sample. **Table 3.14** presents a summary of these results.

Table 3.14: Summary of life event scores for total sample.

SUMMARY OF LIFE EVENT SCORES				
	Mean	**SD**	**Minimum**	**Maximum**
Number of life events	1.68	1.56	0	7
Distress from life events	2.89	3.48	0	16

3.7 Differences between women with and without significant levels of symptoms

The characteristics of the total sample have been described in sections 3.3 to 3.6. This section aims explore the differences between women with and without significant levels of symptoms.

The DASS-21 provides cut-off scores, which can be used to categorise cases based on level of distress. Although self-report measures cannot be used to diagnose depression or anxiety cut-off scores are often used in research to indicate probable depression or anxiety. To allow comparison between level of distress and demographic characteristics the respondents were split into groups based on the DASS-21 cut-off scores. The definition of these groups can be seen in **Table 3.15**.

Table 3.15: Definition of groups based on level of distress.

DEFINITION OF GROUPS BASED ON DISTRESS			
Group	**Definition**	**N**	**%**
Depressed	Score ≥10 on the DASS-21 depression scale (‘Mild or above’)	21	16
Not depressed	Score ≤10 on the DASS-21 depression scale (‘normal’)	110	84
Anxious	Score ≥8 on the DASS-21 anxiety scale (‘Mild or above’)	11	8.4
Not anxious	Score ≤8 on the DASS-21 anxiety scale (‘normal’)	120	91.6
Stressed	Score ≥15 on the DASS-21 stress scale (‘Mild or above’	23	17.6
Not Stressed	Score ≤15 on the DASS-21 stress scale (‘normal’)	108	82.4

3.7.1 Differences in demographic characteristics between the depressed and not depressed groups

The depressed groups (N=21) mean score on the DASS-21 depression scale was 17.9 (out of a possible 42). The mean score for depression in the not depressed group (N=110) was 2.1. Descriptive statistics for two groups are presented in the **Table 3.16**.

Table 3.16: Descriptive statistics of DASS-21 depression score for the depressed and not depressed group.

DECRIPTIVE STATISTICS FOR DEPRESSION SCORE		
	Depressed (N=21)	**Not depressed (N=116)**
Mean	17.9	2.1
SD	9.6	2.9
Minimum	10	0
Maximum	36	10
Median	12	0

3.7.1.1 Maternal age

The mean age of women in the depressed group (27.8) was lower than the mean age of women in the not depressed group (30.0).

This difference was significant t(40.12)= 1.19, p<.05; r=.33[8] which represents a represents a small effect size (Cohen, 1992). However, as the homogeneity of variance and normality of distribution assumptions were violated and a Mann-Whitney test was run. This analysis did not find a significant difference U=867.50, *p*>.05 r=.16, which represents a small effect size (Cohen, 1992).

3.7.1.2 Psychiatric history

Of the women in the depressed group 38 per cent had a psychiatric history and 62 per cent did not. Of the women in the not depressed group 16 per cent had a psychiatric history and 84 per cent did not.

[8] See Appendix 8 for formulas used to calculate effect sizes.

As one of the expected cell's frequency was less than 5 a 2 x 2 Fisher's Exact Test (FET) was used to compare the proportions of women who had a psychiatric history among the depressed and not depressed groups. There was a **significant** difference in proportions of psychiatric history between the depressed and not depressed group ($p \leq .01$)**.**

3.7.1.3 Parity

Of the women in the depressed group 33 per cent were primiparous and 68 per cent multiparous. Of the women in the not depressed group 55 per cent were primiparous and 45 per cent multiparous.

A 2 x 2 chi-square test was calculated to compare the proportions of women who were primiparous and multiparous in the depressed and not depressed groups. There was a **significant** difference in the proportions of parity between the groups. ($\chi^2(1)=4.726$, $p<.05$; N=131)

3.7.1.4 Marital status

Of the women in the depressed group 5 per cent were single and 95 per cent married or cohabiting. Of the women in the not depressed group 12 per cent were single and 88 per cent were married or cohabiting.

As one of the expected cells frequencies was less than 5 a 2 x 2 FET was run to compare the proportions of women who were married and cohabiting in the depressed

and not depressed groups. There was not a significant difference in the marital status between the groups (p=.467).

3.7.1.5 Ethnic origin

As 97 per cent of the sample was of white ethnic origin no statistical analysis was run.

3.7.1.6 Employment status

Of the women in the depressed group, 81 per cent were working (either in full-time employment, part-time employment or as a student) and 19 per cent not working (looking after the home or family, permanently sick or disabled or unemployed). Of the women in the not depressed group 85 per cent were working and 15 per cent not working. One woman had chosen the option 'other' for employment status but had failed to elaborate on this and so her response was excluded from analysis.

A 2 x 2 chi-square test was run to compare the proportions of women who were working and not working in the depressed and not depressed groups. There was no significant difference in employment status between the depressed and not depressed groups ($\chi^2(1)=0.308$, p=.58; N=130).

3.7.1.7 Education level

Of the women in the depressed group 81 per cent had a school leaver qualification (including standard grades/GCSE's and Higher/A-Levels) and 19 per cent had a post school qualification (including college diploma, university degree and 'other'

qualifications[9]). In the not depressed group 89.1 per cent had a school leaver qualification and 10.9 per cent a post school qualification.

As one cell had an expected frequency of less than 5 a 2 x 2 FET was run to compare the proportions of women in the depressed and not depressed and not depressed groups who had a school leaver qualification and post school qualification. There was no significant difference in education level between the groups (p=0.29).

3.7.2 Differences in demographic characteristics between the anxious and not anxious groups

The mean DASS-21 anxiety subscale score for the anxious group was 19.1. The mean DASS-21 anxiety subscale score for the not anxious group was 1.5. Descriptive statistics are presented in **Table 3.17.**

Table 3.17: Descriptive statistics of the DASS-21 anxiety score for the anxious and not anxious groups.

DESCRIPTIVE STATISTICS FOR ANXIETY SCORE		
	Anxious (N=11)	**Not anxious (N=121)**
Mean	19.1	1.5
SD	9.7	2.1
Minimum	8	0
Maximum	36	8
Median	16	0

The demographics of the anxious and not anxious groups were compared as in section 3.7.1.1-3.7.1.7. No significant differences were found between any of the demographic characteristics and the anxious and not anxious groups.

[9] 'Other' qualifications were classified as post school qualifications as they were vocational.

3.7.3 Differences in demographic characteristics between the stressed and not stressed groups

The mean DASS-21 stress subscale score for the stressed group was 24.6. The mean DASS-21 stress subscale score for the not stressed group was 5.5. Descriptive statistics are presented in **Table 3.18**.

Table 3.18: Descriptive statistics of the DASS-21 stress scale for the stressed and not stressed groups.

DESCRIPTIVE STATISTICS FOR STRESS SCORE		
	Stressed (N=23)	**Not stressed (N=108)**
Mean	24.6	5.5
SD	8.4	4.4
Minimum	16	0
Maximum	42	14
Median	20	0

The demographics of the stressed and not stressed groups were compared as in section 3.7.1.1-3.7.1. No significant differences were found between any of the demographic characteristics and the stressed and not stressed groups.

3.7.4 Summary of differences in demographic characteristics and distressed groups of women

- There was a **significant** difference in psychiatric history between the depressed and not depressed group. More women in the depressed group had a psychiatric history.

- There was a **significant** difference in parity between the depressed and not depressed groups. There were more multiparous women in the depressed group.
- There was no significant difference in marital status, employment status and level of education between the depressed and not depressed group.
- No significant differences were found in demographic characteristics between the anxious and not anxious groups.
- No significant differences were found in demographic characteristics between the stressed and not stressed groups.

3.8 Social support

Section 3.7 looked at the differences in demographic characteristics and symptomatology. This section will look at the differences between social support in women with and without significant levels of symptoms. The differences can be found in a summary section 3.8.5. Independent t-tests were used to determine whether or not there was a significant difference between groups. Where the assumption of homogeneity of variance was violated a Welch's t- test was calculated. Where two assumptions of parametric analysis were violated (homogeneity of variance and normality of distribution) non-parametric Mann-Whitney tests were used.

3.8.1 Social support from husband or partner

Tables 3.19 – 3.22 present the differences between social support scores from husband (or partner) and depressive anxious and stress symptomatology, respectively.

3.8.1.1 Depression

There was a **significant difference** between the depressed and not depressed groups mean scores for actual emotional, ideal emotional, actual practical, ideal practical and practical discrepancy from husband (or partner). There was no significant difference found between the depressed and not depressed groups mean score for emotional discrepancy. These results are detailed in **Table 3.19**.

Table 3.19: Differences in social support from husband or partner and depression.

SUPPORT FROM HUSBAND OR PARTNER					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Depressed	11.1	2.2	t(120)=3.881, $p \leq .001$	.33
	Not depressed	12.8	1.7		
Ideal Emotional	Depressed	12.5	1.6	t(22.26)=2.443, $p \leq .05$	.46
	Not depressed	13.4	1.1		
Emotional discrepancy	Depressed	1.5	1.8	t(23.38)=-1.484, $p=.08$	.29
	Not depressed	0.8	1.3		
Actual Practical	Depressed	9.8	2.1	t(22.73)=3.561, $p \leq .001$	.60
	Not depressed	12.3	3.0		
Ideal practical	Depressed	12.7	1.2	t(120)=1.701, $p \leq .05$	.15
	Not depressed	13.1	1.2		
Practical discrepancy	Depressed	2.9	2.2	t(21.90)=3.60, $p \leq .001$	.61
	Not depressed	1.1	1.4		

For the depressed and non-depressed group comparisons between ideal emotional, emotional discrepancy, actual practical and practical discrepancy from husband (or partner) two assumptions of parametric tests were broken (homogeneity of variance and normality of distribution) consequently non-parametric Mann-Whitney tests were run. All significant differences from the parametric analysis remained. **Table 3.20** presents the details of the non-parametric analysis.

Table 3.20: Differences in social support from husband or partner and depression (non-parametric analysis).

SUPPORT FROM HUSBAND OR PARTNER				
Social support	**Group**	**Median**	**Mann-Whitney**	**r**
Ideal Emotional	Depressed	13	μ=605.5 , $p \leq .01$	.30
	Not depressed	14		
Emotional discrepancy	Depressed	5	μ=836.5, $p=.15$	.13
	Not depressed	0		
Actual Practical	Depressed	10	μ=491.5, $p \leq .001$	.34
	Not depressed	13		
Practical discrepancy	Depressed	2.5	μ =490.5, $p \leq .001$	.35
	Not depressed	1		

3.8.1.2 Anxiety

There was a **significant** difference between the anxious and not anxious groups mean scores for actual emotional, emotional discrepancy, actual practical and practical discrepancy from husband (or partner). There was no significant difference found between the anxious and not anxious women's mean scores for ideal emotional and ideal practical support from husband (or partner). These results are shown in **Table 3.21**.

Table 3.21: Differences in social support from husband or partner and anxiety.

SUPPORT FROM HUSBAND OR PARTNER					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Anxious	11.1	2.5	t(120)=2.695, $p \leq .01$	.24
	Not anxious	12.6	1.7		
Ideal Emotional	Anxious	13.1	0.9	t(120)=0.533, $p=.30$	.05
	Not anxious	13.0	1.2		
Emotional discrepancy	Anxious	2.0	1.8	t(120)=2.660, $p \leq .01$	.24
	Not anxious	0.1	1.4		
Actual Practical	Anxious	9.8	3.0	t(120)=2.985, $p \leq .01$	.26
	Not anxious	12.0	1.3		
Ideal practical	Anxious	12.9	1.0	t(120)=-0.450, $p=.32$	.04
	Not anxious	13.1	1.2		
Practical discrepancy	Anxious	3.1	2.3	t(120)=3.809, $p \leq .001$	.33
	Not anxious	1.2	1.5		

3.8.1.3 Stress

There was a **significant** difference between the stressed and not stressed groups mean scores for emotional discrepancy, actual practical and practical discrepancy from husband (or partner). There was no significant difference found between the stressed and not stressed groups mean scores for actual emotional, ideal emotional and ideal practical support from husband (or partner). These results are shown in **Table 3.22**.

Table 3.22: Differences in social support from husband or partner and stress.

SUPPORT FROM HUSBAND OR PARTNER					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Stressed	11.4	2.4	t(26.826)=2.59, *p*=.08	.45
	Not stressed	12.8	1.6		
Ideal Emotional	Stressed	13.0	1.6	t(120)=1.410, *p*=.08	.13
	Not stressed	13.4	1.1		
Emotional discrepancy	Stressed	1.6	2.0	t(26.21)=1.958, *p*≤.05	.36
	Not stressed	0.8	1.2		
Actual Practical	Stressed	9.9	3.4	t(120)=4.552, *p*=.001	.38
	Not stressed	12.3	1.9		
Ideal practical	Stressed	12.6	1.6	t(27.19)=1.641, *p*=.06	.3
	Not stressed	13.1	1.1		
Practical discrepancy	Stressed	2.7	2.2	t(25.77)=3.387, *p*≤.001	.56
	Not stressed	1.1	1.3		

For comparisons between actual emotional, emotional discrepancy, ideal practical and practical discrepancy from husband (or partner) two assumptions of parametric tests were broken; consequently non-parametric Mann-Whitney tests were run. There was no change in significance to the scores presented in **Table 3.22** (parametric analysis).

3.8.2 Social support from mother and distress

Tables 3.23-3.25 present differences in social support scores from mother for women with and without significant levels of symptoms.

3.8.2.1 Depression

There was a **significant difference** between the depressed and not depressed groups mean scores for actual emotional, emotional discrepancy, actual practical and practical discrepancy from mother. There was no significant difference found between the depressed and not depressed groups mean scores for ideal emotional and ideal practical support from mother. These results are shown in **Table 3.23**.

Table 3.23: Differences in social support from mother and depression.

SUPPORT FROM MOTHER					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Depressed	2.2	3.4	t(117)=3.636, $p \leq .001$	.32
	Not depressed	11.7	2.7		
Ideal Emotional	Depressed	12.2	1.7	t(118)=0.964, $p=.17$	.09
	Not depressed	12.7	2.0		
Emotional discrepancy	Depressed	3.0	2.7	t(22.72)=-0.874, $p \leq .01$	.18
	Not depressed	1.0	1.7		
Actual Practical	Depressed	8.6	3.0	t(118)=3.840, $p \leq .001$	.33
	Not depressed	11.2	2.8		
Ideal practical	Depressed	11.5	1.9	t(118)=1.412, $p=.08$	.13
	Not depressed	12.2	2.2		
Practical discrepancy	Depressed	3.0	2.3	t(24.02)=3.416, $p \leq .001$	.57
	Not depressed	1.1	1.8		

For group comparisons between emotional discrepancy and practical discrepancy two assumptions of parametric tests were broken; consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). There was no change in significance to the scores presented in **Table 3.23** (parametric analysis).

3.8.2.2 Anxiety

There was a **significant difference** between the anxious and not anxious groups mean scores for actual emotional, emotional discrepancy, actual practical and practical discrepancy from mother. There was no significant difference found between the anxious and not anxious groups mean scores for ideal emotional, emotional discrepancy and ideal practical support from mother. These results are shown in **Table 3.24**.

Table 3.24: Differences in social support from mother and anxiety.

SUPPORT FROM MOTHER					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Anxious	8.2	3.3	t(117)=3.700, $p \leq .001$	.32
	Not anxious	11.6	2.7		
Ideal Emotional	Anxious	12.2	1.9	t(118)=0.649, $p=.26$	.06
	Not anxious	12.6	2.0		
Emotional discrepancy	Anxious	4.0	3.1	t(9.51)=2.925, $p \leq .01$	.69
	Not anxious	1.1	1.7		
Actual Practical	Anxious	8.0	2.9	t(118)=3.166, $p \leq .01$	.28
	Not anxious	11.0	2.9		
Ideal practical	Anxious	11.7	1.9	t(118)=0.562, $p=.29$	.05
	Not anxious	12.1	2.2		
Practical discrepancy	Anxious	3.7	2.3	t(118)=3.994, $p \leq .001$	.35
	Not anxious	1.2	1.9		

For comparisons between the anxious and not anxious groups emotional discrepancy scores from mother two assumptions of parametric tests were broken. Consequently a non-parametric Mann-Whitney test was run. There was no change in significance in scores presented in **Table 3.24** (parametric analysis).

3.8.2.3 Stress

There was a **significant difference** between the stressed and not stressed groups mean scores for actual emotional, emotional discrepancy, actual practical and practical discrepancy scores from mother. There was no significant difference found between the stressed and not stressed groups mean scores for ideal emotional and ideal practical support from mother. These results are shown in **Table 3.25.**

Table 3.25: Differences in social support from mother and stress.

SOCIAL SUPPORT FROM MOTHER					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Stressed	9.3	2.5	t(117)=3.636, $p \leq .001$	.32
	Not stressed	11.7	2.8		
Ideal Emotional	Stressed	12.1	1.8	t(118)=1.091, $p=.14$	.1
	Not stressed	12.7	2.0		
Emotional discrepancy	Stressed	2.9	2.4	t(117)=4.012, $p \leq .001$	.35
	Not stressed	1.0	1.9		
Actual Practical	Stressed	8.7	2.4	t(118)=3.461, $p \leq .001$	.3
	Not stressed	11.2	3.0		
Ideal practical	Stressed	11.6	1.8	t(118)=1.065, $p=.15$	.1
	Not stressed	12.2	2.2		
Practical discrepancy	Stressed	2.9	2.1	t(118)=3.839, $p \leq .001$	.33
	Not stressed	1.1	1.9		

3.8.3 Social support from an 'other' and distress

Tables 3.26-3.28 present the differences between social support scores from an 'other' and women with and without significant levels of symptoms.

3.8.3.1 Depression

There was a **significant difference** between the depressed and not depressed groups mean scores for actual emotional, emotional discrepancy, actual practical and practical discrepancy from an 'other'. There was no significant difference found between the depressed and not depressed groups mean scores for ideal emotional and ideal practical support from an 'other'. These results are shown in **Table 3.26**.

Table 3.26: Differences in social support from an 'other' and depression.

SOCIAL SUPPORT FROM AN 'OTHER'					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Depressed	10.4	3.2	t(15.98)=2.063, $p \leq .05$	.46
	Not depressed	12.3	1.9		
Ideal Emotional	Depressed	12.8	1.4	t(104)=1.356, $p=.99$	.13
	Not depressed	12.9	1.4		
Emotional discrepancy	Depressed	2.4	3.0	t(14.90)=1.575, $p=.68$	.38
	Not depressed	0.7	1.2		
Actual Practical	Depressed	10.0	3.2	t(15.98)=1.824, $p \leq .05$	.42
	Not depressed	11.4	2.6		
Ideal practical	Depressed	12.0	1.6	t(103)=0.121, $p=.45$	.01
	Not depressed	12.2	2.0		
Practical discrepancy	Depressed	2.1	3.2	t(14.86)=2.026, $p \leq .05$	.47
	Not depressed	0.8	1.4		

For comparisons between actual emotional, emotional discrepancy, actual practical and practical discrepancy two assumptions of parametric tests were broken (homogeneity of variance and normality of data). Consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). The Mann-Whitney test found that the difference between the emotional discrepancy score for the depressed (Mdn=1.5) and not depressed groups (Mdn=0) was **significant** $\mu=615$, $p \leq .01$, r = .027; which represents a small effect size. All other significant differences remained the same as in the parametric analysis (**Table 3.26**).

3.8.3.2 Anxiety

There was a **significant difference** between the anxious and not anxious groups mean scores for actual emotional and actual practical. There was no significant difference found between the anxious and not anxious women's mean scores for ideal emotional, emotional discrepancy, ideal practical and practical discrepancy. These results are shown in **Table 3.27**.

Table 3.27: Differences between social support from an 'other' and DASS -21 Anxiety score.

SUPPORT FROM AN 'OTHER' & ANXIETY SCORE					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Anxious	10.0	3.4	t(116)=2.954, $p \leq .01$	.26
	Not anxious	12.2	2.1		
Ideal Emotional	Anxious	13.0	1.5	t(116)=0.219, $p=.41$	.02
	Not anxious	12.9	1.4		
Emotional discrepancy	Anxious	3.0	3.5	t(9.26)=1.989, $p=.39$	.55
	Not anxious	0.8	1.4		
Actual Practical	Anxious	10.1	3.8	t(116)=1.304, $p \leq .01$	.12
	Not anxious	11.3	2.7		
Ideal practical	Anxious	12.6	1.6	t(115)=-0.742, $p=.23$	.07
	Not anxious	12.1	2.0		
Practical discrepancy	Anxious	2.6	4.0	t(9.22)=1.327, $p=.11$	.4
	Not anxious	0.9	1.5		

For comparisons between, emotional discrepancy and practical discrepancy score two assumptions of parametric tests were broken consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). The Mann-Whitney test found that the difference between the emotional discrepancy score for the anxious (Mdn = 2) and not anxious groups (Mdn = 0) was **significant** (μ=303.5 , $p \leq .01$, r =.24) which represents a small effect size. All other significant differences remained the same (**Table 3.27**).

3.8.3.3 Stress

There was a **significant difference** between the stressed and not stressed groups mean scores for actual emotional, emotional discrepancy, actual practical and practical discrepancy scores from an 'other'. There was no significant difference found between the stressed and not stressed groups mean scores for ideal emotional and ideal practical support from an 'other'. These results are shown in **Table 3.28.**

Table 3.28: Differences in social support from an 'other' stress.

SOCIAL SUPPORT FROM AN 'OTHER'					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Stressed	10.5	3.1	t(24.86)=2.643, $p \leq .001$	.47
	Not stressed	12.3	1.9		
Ideal Emotional	Stressed	13.0	1.5	t(116)=0.176, $p=.43$	.02
	Not stressed	12.9	1.4		
Emotional discrepancy	Stressed	2.5	3.0	t(22.31)=2.811, $p \leq .01$	.51
	Not stressed	0.7	1.1		
Actual Practical	Stressed	9.4	3.3	t(116)=3.492, $p \leq .001$	.31
	Not stressed	11.6	2.5		
Ideal practical	Stressed	11.6	1.9	t(115)=1.544 $p=.06$	.14
	Not stressed	12.3	1.9		
Practical discrepancy	Stressed	2.4	3.1	t(21.57)=2.470, $p \leq .05$	.47
	Not stressed	0.7	1.3		

For comparisons between actual emotional, emotional discrepancy and practical discrepancy score two assumptions of parametric tests were broken consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). The Mann-Whitney test did not find differences in significance from the parametric analysis (**Table 3.28**).

3.8.4 Social support from a second 'other' and distress

Tables 3.29-3.31 present the differences between social support scores from a second 'other' and women with and without significant symptoms.

3.8.4.1 Depression

There was a **significant difference** between the depressed and not depressed groups mean scores for actual emotional, actual practical and practical discrepancy score from a second 'other'. There was no significant difference found between the depressed and not depressed groups mean scores for ideal emotional, emotional discrepancy and ideal practical support from a second 'other'. These results are shown in **Table 3.29**.

Table 3.29: Differences in social support from a second 'other' and depression.

SOCIAL SUPPORT FROM A SECOND 'OTHER'					
Social support	**Group**	**M**	**SD**	**t-test**	**r**
Actual Emotional	Depressed	9.9	3.7	t(15.98)=2.063, $p \leq .05$	.46
	Not depressed	12.0	2.4		
Ideal Emotional	Depressed	12.1	2.2	t(104)=1.356, $p=.99$	.13
	Not depressed	12.7	1.4		
Emotional discrepancy	Depressed	2.2	3.4	t(14.90)=1.575, $p=.68$	.38
	Not depressed	0.8	1.5		
Actual Practical	Depressed	9.2	4.1	t(15.98)=1.824, $p \leq .05$	.42
	Not depressed	11.2	2.7		
Ideal practical	Depressed	12.1	1.8	t(103)=0.121, $p=.45$	.01
	Not depressed	12.0	2.0		
Practical discrepancy	Depressed	2.9	3.7	t(14.86)=2.026, $p \leq .05$	.47
	Not depressed	0.9	1.6		

For comparisons between actual emotional, emotional discrepancy, actual practical and practical discrepancy score two assumptions of parametric tests were broken consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). The Mann-Whitney statistic did not find any differences in significance from the previous parametric analysis (**Table 3.29**).

3.8.4.2 Anxiety

There were no significant differences found between the anxious and not anxious groups mean scores for actual emotional, ideal emotional and emotional discrepancy or actual practical, ideal practical and practical discrepancy score from a second 'other'. These results are shown in **Table 3.30**.

Table 3.30: Differences in social support from a second 'other' and anxiety.

SOCIAL SUPPORT FROM A SECOND 'OTHER'					
Social support	**Group**	**M**	**SD**	**t-test**	**R**
Actual Emotional	Anxious	9.6	2.4	t(8.46)=1.574, *p*=.08	.48
	Not anxious	11.9	4.4		
Ideal Emotional	Anxious	11.9	2.5	t(104)=1.529, *p*=.06	.15
	Not anxious	12.7	1.4		
Emotional discrepancy	Anxious	2.3	4.1	t(8.21)=1.053, *p*=.16	.34
	Not anxious	0.9	1.5		
Actual Practical	Anxious	8.1	4.9	t(8.43)=1.863, *p* =.06	.54
	Not anxious	11.2	2.6		
Ideal practical	Anxious	12.0	2.1	t(103)=0.015, *p*=.49	0
	Not anxious	12.0	2.0		
Practical discrepancy	Anxious	3.9	4.2	t(8.21)=2.074, *p*=.36	.59
	Not anxious	0.9	1.6		

For comparisons between the actual emotional, emotional discrepancy, actual practical and practical discrepancy scores from a second 'other' two assumptions of

parametric tests were broken. Consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). The Mann-Whitney test found that the difference between the actual practical score for the anxious (Mdn=6) the difference between the practical discrepancy for the anxious (Mdn=3) and not anxious (Mdn=0) groups was **significant** μ=243, $p \leq .05$, r = .24; which represents a small effect size (Cohen, 1992). All other significant differences remained the same as in the parametric analysis (**Table 3.30**).

3.8.4.3 Stress

There was a **significant difference** between the stressed and not stressed groups mean scores for actual emotional, ideal emotional, emotional discrepancy, actual practical and practical discrepancy scores from a second 'other'. There was no significant difference found between the stressed and not stressed groups mean scores for ideal practical support from a second 'other'. These results are shown in **Table 3.31**.

Table 3.31: Differences in social support from a second 'other' and stress.

SOCIAL SUPPORT FROM A SECOND 'OTHER'					
Social support	**Group**	**M**	**SD**	**t-test**	**R**
Actual Emotional	Stressed	9.6	3.7	t(18.26)=2.654, $p \leq .01$	.53
	Not stressed	12.1	2.2		
Ideal Emotional	Stressed	12.0	2.1	t(104)=1.872, $p \leq .05$	.18
	Not stressed	12.1	1.4		
Emotional discrepancy	Stressed	2.4	3.2	t(17.29)=2.149, $p \leq .05$	.46
	Not stressed	0.7	1.4		
Actual Practical	Stressed	8.6	3.8	t(104)=3.640, $p \leq .001$	.34
	Not stressed	11.4	2.6		
Ideal practical	Stressed	11.4	2.0	t(103)=1.380, $p=.09$	.13
	Not stressed	12.1	1.9		
Practical discrepancy	Stressed	2.8	3.4	t(17.34)=2.206, $p \leq .05$	.47
	Not stressed	0.9	1.6		

For comparisons between actual emotional, emotional discrepancy, actual practical and practical discrepancy score two assumptions of parametric tests were broken consequently non-parametric Mann-Whitney tests were run (as in section 3.8.1). The Mann-Whitney analysis found no difference in significance compared to the parametric analysis in **Table 3.31**.

3.8.5 Summary of social support differences between groups

Section 3.8 presented the differences in level of social support between women with and without significant levels of symptoms. In summary the main findings are:

- Postnatal women with depression and anxiety symptoms had lower emotional and practical support from their husband (or partner) and mother. Women with suffering from stress symptoms had significantly lower emotional support from their mother but not husband (or partner). In addition women with significant depression, anxiety and stress symptomatology were less satisfied with the emotional support from their husband (or partner) and mother.

- Overall, postnatal women with depression and/or anxiety symptoms had significantly lower emotional and practical support from others. In addition these women were less satisfied with the emotional and practical support they received from others.

3.9 Life events and symptomatology

Section 3.8 has looked at the differences between levels of social support in women with and without significant levels of symptomatology. This section will look at the differences in the number of life events and distress experienced from life events in women with and without significant levels of symptomatology.

3.9.1 Life events and depression

3.9.1.1 Number of life events

The depression group (M= 2.57) experienced a higher *number* of life events than the not depressed group (M=1.52). For descriptive statistics refer to **Table 3.32**. As the homogeneity of variance assumption was violated a Welch's T-test was calculated. This difference was **significant** t(23.33)=2.927, $p \leq .05$; and represents a medium effect size r = 0.52 Cohen (2002).

Table 3.32: Number of life events and depression.

NUMBER OF LIFE EVENTS		
	Depressed (N=21)	**Not depressed (N=116)**
Mean	2.57	1.52
SD	2.11	1.37
SE	0.46	0.13

As two assumptions of parametric tests were broken in the above analysis (homogeneity of variance and normality of distribution) a Mann-Whitney test was

also run. The difference between the number of life events experienced by the depressed group (Mdn=2) remained **significant** from the number experienced by the not depressed group (Mdn=1) μ= 809.5, $p \leq .05$, r=.20, which represents a small effect size (Cohen, 1992).

The parametric analysis was re-run to include maternal age, parity and psychiatric history as covariates (see section 3.7.) No covariates were found to have a significant influence on the *number* of life events and the difference between the depressed and not depressed groups number of life events remained **significant** F(1,103) =2.420, $p \leq .05$.

3.9.1.2 Distress from life events

The depression group (M=5.43) experienced more *distress* from life events than the not depressed group (M=2.41). For descriptive statistics refer to **Table 3.33.** As the homogeneity of variance assumption was violated a Welch's t-test was used this showed that this difference was **significant** t(23.37)=2.872, $p \leq .05$; r=.51, which represents a medium effect size (Cohen, 1992).

Table 3.33: Distress from life events and depression.

DISTRESS FROM LIFE EVENTS		
	Depressed (N=21)	**Not depressed (N=116)**
Mean	5.43	2.41
SD	4.63	3.03
SE	1.01	0.29

As two assumptions of parametric tests were broken in the above analysis (homogeneity of variance and normality of distribution) a Mann-Whitney test was also run. The difference between the distress experienced from life events by the depressed group (Mdn=5) and not depressed group (Mdn=2) remained significant μ= 660.5, $p \leq .01$, r= .28, which represents a small effect size (Cohen, 1992).

The parametric analysis was re-run to include maternal age, parity and psychiatric history as covariates (see section 3.7.) No covariates were found to have a significant influence on distress from life events and the difference between the depressed and not depressed groups number of life events remained **significant** F(1,110) =3.843, $p \leq .001$.

3.9.2 Life events and anxiety

3.9.2.1 Number of life events

The anxious group (M=2.82) experienced a greater *number* of life events than the not anxious group (M=1.58). For descriptive statistics refer to **Table 3.34**. An independent groups t-test showed that this difference was **significant** t(129)=2.576, $p \leq .01$; r=.22, which represents a small effect size (Cohen, 2002).

Table 3.34: Number of life events experienced and anxiety.

NUMBER OF LIFE EVENTS		
	Anxious (N=11)	**Not anxious (N=112)**
Mean	2.82	1.58
SD	1.83	1.49
SE	0.55	0.14

3.9.2.2 Distress from life events

The anxious group (M=6.82) experienced more *distress* from life events than the not anxious group (M=2.53). For descriptive statistics refer to **Table 3.35**. An independent groups t-test showed that this difference was **significant** t(129)=4.124, $p \leq .001$, r=.34 which represents a small effect size (Cohen, 2002).

Table 3.35: Distress from life events and anxiety.

DISTRESS FROM LIFE EVENTS		
	Anxious (N=11)	**Not anxious (N=112)**
Mean	6.82	2.53
SD	4.46	3.16
SE	1.40	0.29

3.9.3 Life events and stress

3.9.3.1 Number of life events

The stressed group (M= 2.48) experienced a higher *number* of life events than the not stressed group (M=1.52). For descriptive statistics refer to **Table 3.36**. As the homogeneity of variance assumption was violated a Welch's t-test was used. This showed that the difference was **significant** t(26.46)=2.151, $p \leq .05$; r = 0.39, which represents a medium effect size (Cohen, 2002).

Table 3.36: Number of life events experienced and stress.

NUMBER OF LIFE EVENTS		
	Stressed (N=23)	**Not stressed (N=108)**
Mean	2.48	1.52
SD	2.04	1.38
SE	0.43	0.13

As two assumptions of parametric tests were broken in the above analysis (homogeneity of variance and normality of distribution) a Mann-Whitney test was run. The difference between the number of life events experienced by the stressed (Mdn=2) and not stressed group (Mdn=1) remained **significant** μ= 890.5, $p \leq .05$, r= 28, which represents a medium effect size (Cohen, 1992).

3.9.3.2 Number of life events

The stressed group (M=5.09) experienced more *distress* from life events than the not stressed group (M=2.43). For descriptive statistics refer to **Table 3.37.** As the homogeneity of variance assumption was violated a Welch's t-test was used. This showed that the difference was **significant** t(26.6)=2.726, $p \leq .05$; r=0.47, which represents a large effect size (Cohen, 2002).

Table 3.37: Distress from life events and stress.

DISTRESS FROM LIFE EVENTS		
	Stressed (N=23)	**Not stressed (N=108)**
Mean	5.09	2.43
SD	4.46	3.08
SE	0.93	0.30

As two assumptions of parametric tests were broken in the above analysis (homogeneity of variance and normality of distribution) a Mann-Whitney test was also run. The difference between the distress from life events experienced by the stressed group (Mdn=3) and not stressed group (Mdn=1) remained **significant** μ= 721.5, $p \leq .001$, r=.28, which represents a medium effect size (Cohen, 1992).

3.9.4 Summary of differences between life events and symptomatology

Section 3.9 has explored differences in the number of life events experienced and distress from life events between women with and without significant symptoms. The findings are summarised below:

- There was a **significant** difference in the number of life events experienced by women in the depressed, anxious and stressed groups compared to the not depressed, not anxious and not stressed groups. Since finding out they were pregnant with their youngest child women suffering from depression, anxiety and stress had experienced a greater number of life events.
- There was a **significant** difference in the distress experienced from life events by women in the depressed, anxious and stressed groups compared to the not

depressed, not anxious and not stressed groups. Since finding out they were pregnant with their youngest child women suffering from depression, anxiety and stress experienced more distress from life events.

3.10 Factors influencing postnatal emotional distress

Sections 3.7, 3.8 and 3.9 looked at the differences in demographic characteristics, social support and life events between women with and without significant levels of symptomatology. This section aims to expand on the previous analysis by looking at multiple factors, which influence postnatal emotional distress.

The hierarchical method of multiple regression was used to explore factors influencing distress. This allows regression predictors to be entered into the model based on past research. Independent variables, which cannot be manipulated, for example, demographic characteristics are entered first followed by known predictors from the literature (Field, 2005). This allows the model to test how much variance is accounted for in the dependent variable (DV) by independent variables (IV) when other variables are in the model (Clarke-Carter, 2004).

Pearson bivariate correlations were examined before proceeding with the regression to decide which variables to retain and exclude from analysis. This correlation matrix can be found in Appendix 9. Multicollinearity and unvariate assumptions were checked throughout analysis.

3.10.1 Factors influencing postnatal depression symptomatology

For the analysis the DV was set as depression score and all potential IVs were checked using a correlation matrix (Appendix 9). When exploring the correlation matrix some IVs (number of life events and distress from life events, and actual emotional support and emotional discrepancy from husband or partner) were highly correlated ($r \geq .8$). Decisions were made about which to include in the analysis as IVs that are highly correlated with each other can result in an unstable model due to multicollinearity.

The initial regression revealed that with parity, husband (or partner) emotional discrepancy score and distress from life events in the model a significant proportion of variance in the depression score was accounted for, $R^2 = .278$, $F(3, 121) = 15.037$, $p \leq .001$. To explore the impact of social support from other sources on depression support scores for mother, other 1 and other 2 were sequentially entered into the model and non-significant variables were removed. When parity, husband (or partners) emotional discrepancy score, life event distress, mother actual emotional and other1 practical discrepancy scores were entered into the model a larger proportion of variance in the depression score was accounted for, $R^2 = .373$, $F(1,96) = 6.894$, $p \leq .001$. Additional details of the regression analysis are presented in **Table 3.38**.

Table 3.38: Multiple regression of depression symptoms.

	R	R^2	β	Standardised β	t	*p*
Variable						
Parity	.209	.044	3.35	.209	2.141	≤.05
Husband ED	.368	.149	1.81	.325	3.505	≤.001
Life Event	.527	.278	0.83	.367	4.171	≤.001
Mother AE	.573	.328	-0.63	-.234	-2.706	≤.01
Other1 PD	.611	.373	1.04	.249	2.626	≤.01

Note: 'Husband ED'= discrepancy in emotional support from Husband (or partner); 'Life Event' =Distress from life events; 'Mother AE' = actual emotional support from Mother; 'Other1 PD' = discrepancy in practical support from an 'other'.

3.10.2 Factors influencing postnatal anxiety symptomatology

In order to explore factors influencing postnatal anxiety the regression was re-run with anxiety score as the DV. As the scores from the depression, anxiety and stress scales are highly correlated (see Appendix 9) the same IVs were entered into the model: parity, husband (or partner) emotional discrepancy and distress from life events. Following the removal of non-significant variables from the model mothers emotional discrepancy and practical discrepancy from an 'other' was entered sequentially. Non-significant variables were removed from the model. The analysis showed that with husband (or partner) emotional discrepancy, distress from life events and mothers emotional discrepancy score in the model a significant proportion of

variance of the anxiety score was accounted for R^2 = .223, F(3,108) = 10.966, $p \leq .001$. Additional details of the regression analysis are presented in **Table 3.39**.

Table 3.39: Multiple regression of anxiety symptoms.

	R	R^2	β	Standardised β	t	*p*
Variable						
Husband ED	.281	.079	.785	.396	1.928	≤.05
Life Event	.447	.200	.595	.158	3.765	≤.001
Mother AE	.483	.233	-.409	-.187	2.186	≤.05

Note: 'Husband ED'= discrepancy in emotional support from Husband (or partner); 'Life Event' =Distress from life events; 'Mother AE' = actual emotional support from Mother.

3.10.3 Factors influencing postnatal stress symptomatology

In order to explore the predictors of postnatal stress the regression was re-run with the stress score as the DV. The IVs were entered into the equation as detailed in section 3.8.2.

The analysis showed that with husband (or partner) emotional discrepancy, distress from life events mothers emotional discrepancy and practical discrepancy from an 'other' in the model a significant proportion of variance from stress score was accounted for R^2 = .392, F(4,97) =15.626, $p \leq .001$. Additional details of the regression analysis are presented in **Table 3.40**.

Table 3.40: Multiple regression of stress symptoms.

	R	R^2	β	Standardised β	t	*p*
Variable						
Husband ED	.363	.132	1.347	.203	2.445	≤.05
Life Event	.539	.291	.710	.263	2.867	≤.01
Mother AE	.592	.350	-.784	-.244	2.977	≤.01
Other1 PD	.626	.392	1.181	.236	2.573	≤.05

Note: 'Husband ED'= discrepancy in emotional support from Husband (or partner); 'Life Event' =Distress from life events; 'Mother AE' = actual emotional support from Mother; 'Other1 PD' = discrepancy in practical support from an 'other'.

3.10.4 Summary of factors influencing postnatal emotional distress

Section 3.8 explored factors influencing postnatal depression, anxiety and stress. The main findings are summarised below:

- Parity was a significant factor influencing depression symptoms but did not predict anxiety or stress in postnatal women.
- Dissatisfaction with emotional support from husband (or partner) was a significant factor influencing depression, anxiety and stress in postnatal women.
- Distress from life events was a significant factor influencing depression, anxiety and stress in postnatal women.

- Emotional support from mother was a significant factor influencing depression, anxiety and stress in postnatal women.
- Dissatisfaction with practical support from an 'other' was a significant factor influencing depression and stress in postnatal women but not anxiety symptomatology.

3.11 Barriers to help-seeking in the postnatal period

Section 3.8 looked at factors influencing postnatal emotional distress. This section aims to understand barriers to help-seeking in the postnatal period by locating the underlying dimensions of the barriers to help-seeking questionnaire (for details of how this was developed refer to section 2.5.4). The reliability of this measure will be addressed and the relationship between barriers to help-seeking symptomatology and social support explored.

3.11.1 Principal Component Analysis (PCA)

PCA with varimax rotation was selected for exploring the underlying structure of the questionnaire. The data was screened using a correlation matrix to check for relationships between items but not singularity. In addition Bartlett's measure test was highly significant ($p \leq .001$) indicating some variables are related.

Tabachnick and Fidell (2001) provide the following guide for sample sizes when using factor analysis. They class sample sizes of 50 as 'very poor', 100 'poor', 200 'fair' and 300 'good'. One hundred and five women completed the barriers to help-seeking measure. To increase the sample size the researcher pooled the responses

from the pilot (N=30) providing a sample of 135 for analysis. Before pooling the sample analysis was run not including the responses from the pilot. The same underlying structure was produced by both analysis and so the pooled sample was used.

To assess multivariate normality the distribution of responses was examined. Items that had two consecutive responses selected less than 10 per cent were removed from further analysis. Four such items were removed.[10]

PCA with varimax rotation was initially selected to estimate the number of factors from eigenvalues. The maximum number of components identified was five (eigenvalues over one). However, when examining the scree plot (**Figure 3.6**) the retention of five factors seemed unreasonable due to a break in continuity between components 3-5. Therefore PCA was run specifying three, four and five factors to find the best solution.

[10]'I was worried that admitting to experiencing postnatal emotional difficulties would give my family a bad name'
'I felt that my emotional difficulties were not assessed properly by health professionals'
'I felt that health professionals were not knowledgeable about emotional difficulties in the postnatal period'
'In my experience health professionals do not want to discuss emotional issues'

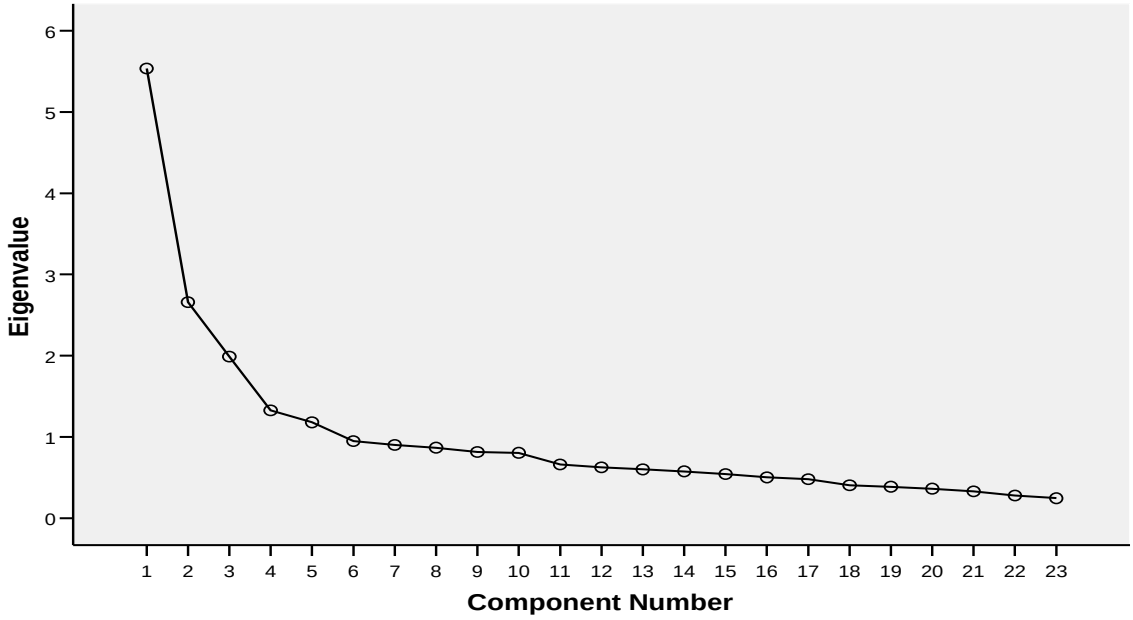


Figure 3.6: A scree plot showing the amount of variance accounted for by each component.

The eigenvalues for the first three components are: 5.54, 2.66 and 1.99 respectively and collectively account for 44.3 per cent of the variance. Eigenvalues for the remaining components drop to 1.33 and 1.78 respectively and thus account for less variance. It was decided that components would be retained with eigenvalues close to two. Further details of the variance accounted for by each component can be found in **Table 3.41**.

Table 3.41: Variance accounted for by 5 components with eigenvalues over 1.

VARIANCE ACCOUNTED FOR BY EACH COMPONENT			
	Initial Eigenvalues		
	Total	% of variance	Cumulative %
Component 1	5.56	24.1	24.2
Component 2	2.66	11.6	35.6
Component 3	1.99	8.6	44.3
Component 4	1.33	5.6	50.0
Component 5	1.18	5.1	55.2

The reliability of the three components was then examined. Cronbach's alpha for the first component suggested a reliable scale (.863) and all corrected-item total correlations were above .3. However, the alpha levels for components two and three were below the .7 recommendation for reliability (.162 and .581, respectively). In addition the corrected-item total correlations for all items on component two were below .2, indicating that they do not contribute substantially to the component. Due to this a two components solution was run and reliability of the two components examined as above. Again, Cronbach's alpha for the second scale and corrected-item total correlations suggested that, this component was not reliable. Subsequently a single factor solution was run. The corrected-item total correlations for the single scale showed that some items had a correlation below .3. These items (three in total[11]) were subsequently removed from the scale leaving twenty items in total. The Cronbach's alpha of the single scale of twenty items was .857 and all the corrected-total correlations were above .33, suggesting all items were contributing to the scale. The item loadings for the single scale solution can be found in **Table 3.42**.

[11] 'Health professional roles are limited to physical health'
'Appointment times were inconvenient to attend'
'Health professionals refer on to other services'

Table 3.42: Item loadings on a one-component solution.

1 COMPONENT SOLUTION (VARIMAX ROTATION)	
Items	**Component**
Q13: Hesitant about approaching mental health services for help with difficulties	.672
Q11: Experiencing difficulties was something to be ashamed of	.648
Q16: Partner and family were knowledgeable about difficulties	.611
Q8: Believed I could seek support to cope with the highs & lows of motherhood	.608
Q2: Easy to disclose distressing feelings to partner, family & professional	.605
Q7: Denied I was experiencing difficulties	.585
Q20: It was acceptable to admit emotional difficulties within my family	.563
Q12: Not afraid of being labelled 'mentally-ill'	.542
Q14: Had sufficient time to seek help	.536
Q9: Worried about having baby taken away	.516
Q3: Didn't know where to get help	.509
Q19: It was unacceptable to admit emotional difficulties outside my family	.500
Q10: Felt there was no stigma surrounding postnatal mental health	.498
Q1: Reluctant to obtain professional assistance	.442
Q21: Appointments were too short to discuss emotional difficulties	.435
Q4: Aware of treatment options available	.430
Q22: Emotional difficulties were taken seriously by health professionals	.422
Q26: Services are geared towards picking up emotional difficulties	.410
Q6: Knowledge about emotional difficulties in the postnatal period	.408
Q18: Partner and family encouraged me to seek help	.406

3.11.2 Barriers to help-seeking in a postnatal population

Eighty percent of respondents (N=105) completed the barriers to help-seeking measure. The mean score of barriers to help-seeking was 47.8 out of a possible 100 (SD=13.4; median = 48.0). Descriptive statistics for barriers to help-seeking are presented in **Table 3.43**.

Table 3.43: Descriptive statistics for barriers to help-seeking.

BARRIERS TO HELP-SEEKING	
Mean	47.8
SD	13.4
Minimum	20
Maximum	81
Median	48.0
Skewness	-0.046
Standard Error of Skewness	0.236
Kurtosis	0.487
Standard Error of Kurtosis	0.467

The skewness and kurtosis of participants total score for the barriers to help-seeking measure were examined using a histogram. The data appeared to be roughly normally distributed, this was supported by the Kolmogorov-Smirnoff statistic, which was not significant ($p<.05$).

3.11.3 Barriers to help-seeking, distress and social support

To look at the relationship between barriers to help-seeking distress and social support correlations were run for symptomatology (depression, anxiety, stress and distress) and total emotional support scores.

There was a **significant** relationship between barriers to help-seeking score and depression (r=.283; $p\leq.01$), anxiety (r=.285; $p\leq.01$), stress (r=.381; $p\leq.01$) and distress (r=.357; $p\leq.01$) symptomatology.

There was also a **significant** relationship between barriers to help-seeking score and total emotional discrepancy (r=.368; $p\leq.01$), practical discrepancy (r=.347; $p\leq.01$),

actual emotional (r=-.472; $p \leq .01$) actual practical (r=-327; $p \leq .01$) and ideal emotional score (r=-.309; $p \leq .01$).

There was no significant relationship between the barriers to help-seeking score and total ideal practical support (r=-.192; $p > .05$).

3.11.4 Summary of barriers to help-seeking in the postnatal period

This section looked at the factor structure of the barriers to help-seeking measure and examined the relationship between barriers to help-seeking, distress and social support. The main findings are summarised below.

- The measure showed that it had a one-factor reliable solution.
- There was a **significant** relationship between the barriers to help-seeking measure and symptomatology. Women with higher levels of symptomatology (depression, anxiety and stress scores) showed higher scores on the barriers to help-seeking measure.
- There was a **significant** relationship between the barriers to help-seeking measure and social support. Women less satisfied with both the emotional and practical support they received gained higher scores on the barriers to help-seeking measure. Women with less emotional and practical support received higher scores on the barriers to help-seeking. Women with lower ideal emotional scores received higher scores on the barriers to help-seeking

measure. There was no significant relationship between women's ideal practical score and the score on the barriers to help-seeking measure.

3.12 Desired support options for postnatal emotional issues

Section 3.10 will present the desired support options for postnatal emotional issues as identified by postnatal women in West Lothian. The questionnaire included the question: '*If you would like support for postnatal emotional issues (such as low mood or anxiety) which would you consider*? **Table 3.44** will present the desired support options identified for postnatal emotional distress.

Table 3.44: Desired support options for postnatal emotional distress.

DESIRED SUPPORT OPTIONS		
	N	**%**
Recommended 'self-help' reading material	39	29.5
Recommended 'self-help' CD	14	10.6
Recommended 'self-help' internet site	25	18.9
Speaking to a GP	78	59.1
Use of medication	26	19.7
Speaking to a Health visitor	39	29.5
Attending a therapy group for women with similar difficulties (e.g., anxiety management group)	29	22
Attending a social support group (e.g., an informational group for women with small children)	33	25
Telephone advice from a trained professional	13	9.8
Seeing a professional (such as a clinical psychologist / counsellor) for one- to –one therapy	39	29.5

Note: Women were able to endorse more than one option. Percentages are calculated individually for each option.

3.13 Summary of main findings

This section will summarise the main findings of the thesis and tie them back to the research questions presented in section 1.6.

1. What is the prevalence of depression, anxiety and stress in a population of postnatal women in West Lothian?

    - 16 per cent of women had significant depressive symptomatology;

- 8.4 per cent of women had significant anxiety symptomatology;
- 17.6 per cent of women had significant stress symptomatology;
- One woman indicated experiencing significant anxiety symptomatology *without* depressive co-morbidity;
- Seven women indicated experiencing significant stress symptomatology *without* depressive symptomatology.

2. What are the psychosocial risk factors influencing postnatal depression, anxiety and stress?

- The psychosocial risk factors influencing *depression* are: parity, dissatisfaction with emotional support from a husband (or partner), distress from life events, actual emotional support from a mother and dissatisfaction with practical support from an 'other';
- The psychosocial risk factors influencing *anxiety* are: dissatisfaction with emotional support from a husband (or partner), distress from life events, actual emotional support from a mother;
- The psychosocial risk factors for *stress* are: dissatisfaction with emotional support from a husband (or partner), distress from life events, actual emotional support from a mother and dissatisfaction with practical support from an 'other'.

3. What is the relationship between barriers to help-seeking, emotional distress and social support in the postnatal period?

- Women with higher levels of depression, anxiety stress and distress symptomatology perceived *more* barriers to help-seeking;
- Women less satisfied with their emotional and practical support perceived *more* barriers to help-seeking;
- Women receiving less emotional and practical support perceived *more* barriers to help-seeking;
- Women with lower ideal emotional scores perceived *more* barriers to help-seeking.

4. What interventions are acceptable to postnatal women in West Lothian?

- Women's preferred support option was speaking to a general practitioner, 59.1 per cent of women indicated that they would like this support if suffering emotional difficulties in the postnatal period;
- 29.5 per cent of women indicated that they would consider speaking to a health visitor, professional for one-to-one therapy or use self-help reading material;
- 25 per cent of women indicated that they would like to attend a social support group;
- 22 per cent of women indicated that they would like to attend a group for women experiencing similar difficulties;
- 19.7 per cent indicated that they would use medication;

- 18.9 per cent indicated that they would like to use a recommended self-help internet site;
- 10.6 per cent indicated that they would like to use a recommended self-help CD;
- 9.8 per cent indicated that they would like to receive telephone advice from a trained professional.

4. DISCUSSION

4.1 Overview

This section will discuss the results presented in section 3 and place them in context of the research literature. It will highlight theoretical considerations as well as future service implications. The limitations of the study and directions for future research will be discussed throughout as they arise.

4.2 Discussion of results

4.2.1 Prevalence of postnatal emotional distress

In a population of postnatal women in West Lothian the prevalence of depression, anxiety and stress was 16 per cent, 8.4 per cent and 17.6 per cent respectively. SIGN (2002) suggest that the prevalence of PND lies between 10-15 per cent (SIGN, 2002). The prevalence of anxiety in this postnatal population (8.4 per cent) is lower than found in a previous study, which reported that 12 per cent of postnatal women in their sample experienced significant anxiety (Miller *et al.*, 2005). The prevalence of stress in this population (17.6 per cent) was higher than had been reported in a previous study, which found that only 6 per cent of their sample experienced significant stress symptomatology (Miller *et al.*, 2005). The differences in the prevalence of anxiety and stress may be due to different inclusion criteria used. Miller *et al.* (2005) only included primiparous women, in contrast this study included both first time mothers

and multiparous women. It can be reasonably hypothesised that first time mothers may be more anxious and women with more children more stressed.

When considering co-morbidity of emotional distress one woman indicated suffering significant anxiety symptomatology without depression and seven women indicated suffering stress symptomatology in the absence of depression. These results should be treated with caution given the small numbers. However, they highlight the point that women in the postnatal period may be suffering significant distress, which may not be detected by screening measures which focus primarily on depression, as recommended by NICE (2007). This specifically brings into question the 'Whooley'[12] questions recommended by NICE (2007) which ask exclusively about depressive symptomatology. This supports the proposal for a broader classification of postnatal emotional distress: one that does not use depression as the sole marker for psychological difficulties in the postnatal period.

Several limitations of this study are worth considering at this point. Firstly, as the research is not of a longitudinal design, it is not possible from this study to ascertain when the symptoms of distress developed. There is evidence that emotional difficulties can develop during pregnancy and continue into the postnatal period (Matthey *et al.*, 2003). A move towards considering perinatal mental health has been highlighted by NICE (2007) and studies have started to investigate clinical issues throughout this transitional period (Austin & Priest, 2005). Therefore, as well as looking at a broader classification of emotional distress, future research should begin

[12] 'during the past month, have you often been bothered by feeling down, depressed or hopeless?' 'during the past month, have you often been bothered by having little interest or pleasure in doing things?'

to address the perinatal period as a whole, widening the focus further to look at *perinatal* emotional distress.

The sole reliance of the study on self-report questionnaire measures may also be seen as a limitation. It would be more informative to have engaged women in structured clinical interviews, as this would have allowed not just the symptoms of distress to be assessed but also the impact on functioning and the women's coping skills. However, in terms of prevalence estimates, it has been suggested that there is little difference between the different methodologies used to assess these (O'Hara & Swain, 1996).

4.2.2 Characteristics of women suffering postnatal emotional distress

When looking at the socio-demographic risk factors, overall depressed women were found to have a psychiatric history and more than one child. This finding did not apply to women with anxiety or stress symptomatology. When considering psychosocial factors, women with significant levels of depression, anxiety and stress symptomatology received less practical and emotional support and were less satisfied with the support received. Symptomatic women also reported experiencing a greater number of life events and more distress from life events than women without significant symptomatology (depression, anxiety and stress). Overall, these findings are in line with previous literature, which highlighted three main risk factors for PND: psychiatric history, low levels of social support and adverse life events (Beck, 2006; O'Hara & Swain, 1996; Pope, 2000) In addition, previous literature has shown anxiety disorders to be associated with threat based life events (Bonifacio *et al.*, 2004)

and social support protective against psychological distress (Champion & Goodall, 1998).

The results also highlighted parity as a difference between the depressed and not depressed women. In an attempt to control for confounding stress associated with having more than one child researchers usually select primiparous women and thus parity is not often explored (Miller *et al.*, 2005). The influence of parity on PND will be discussed later when considering multivariate analysis.

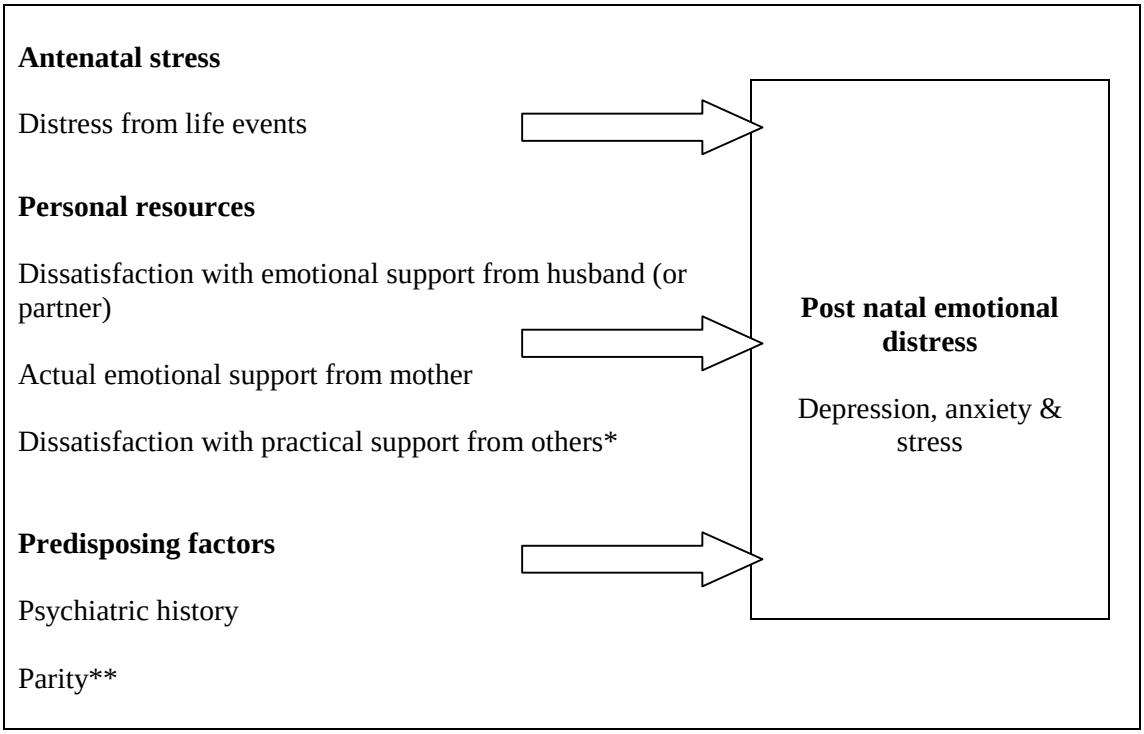
Further methodological limitations of this study should be mentioned. The measure of stressful life events included an item[13] that was specific to multiparous women and thus may have falsely increased their score compared to women without children. In addition pregnancy itself can be considered a stressful life-event (Terry *et al.*, 1996). It would have been interesting to ask women about their experience of pregnancy and childbirth, as specifically obstetric complications have been linked to the onset of PND (Pope, 2000). Although not asked directly about their experience, women did have the option to specify an 'other' stressful event that occurred since finding out they were pregnant. Out of the six women who specified further events only one woman identified an event directly related to pregnancy (prolonged morning sickness).

The influence of the socio-demographic and psychosocial risk factors will be discussed further below considering the multivariate analysis, which attempted to tease apart the influence of these factors on postnatal emotional distress.

[13] 'Have you had any trouble or behaviour problems with your children?'

4.2.3 Psychosocial risk factors influencing postnatal emotional distress

Multivariate analysis revealed that the psychosocial factors influencing depression were: parity, dissatisfaction with emotional support from husband (or partner), distress from life events, actual emotional support from mother and dissatisfaction with practical support from an 'other'. This model was then used to explore factors influencing anxiety and stress symptomatology. Factors influencing symptoms can be seen in the **Figure 4.1** below.



Note: * = does not significantly influence anxiety symptomatology; ** =only found to significantly influence depressive symptomatology.

Figure 4.1: A diagram showing factors influencing postnatal emotional distress.

From the diagram (**Figure 4.1**) it can be seen that there is something unique about the relationship between parity and depressive symptomatology. Parity accounts for a

significant amount of the variance in the DASS-21 depression score but not for the anxiety or stress scores. In early work looking at the social origins of depression Brown and Harris (1978) found that women with three or more children in the home were more likely to be depressed. However, they suggested this was linked to social deprivation, so involving other vulnerability factors. A previous thesis by Wright (2007) found that parity impacted on factors influencing antenatal depression, anxiety and stress. She found that first time mothers required more emotional support, whereas multiparous required more practical support. Due to the smaller sample size in this study, it was not possible to separate out primiparous and multiparous women when looking at factors influencing distress. The research found that parity only significantly influenced depressive symptomatology, which is different to what Wright (2007) found in her antenatal sample. Research has previously highlighted that feelings of entrapment are associated with the onset of depression and it has been hypothesised that women with more children may feel more 'trapped' by their situation (Brown & Harris, 1978). In addition it has been noted that employment may protect multiparous women developing depression and women with more children in the home are less likely to work (Brown & Harris, 1978). Further research is required to look at the influence of parity on emotional distress during the transition to parenthood.

Dissatisfaction with emotional support from husband (or partner) and mother are significant factors influencing depression, anxiety and stress symptomatology. Previous research has highlighted the role of partner support and satisfaction with this as important in protecting against PND (Goldstein *et al.*, 1993; O'Hara & Swain, 1996). Pope (2000) highlighted that support from a woman's own parents is

important at this time. This research suggests that there is something unique about the partner and mother's emotional support that is protective during the postnatal period.

There is little research looking specifically at the role of a woman's mother throughout the transition to parenthood and why this may be important. Fischer (1981) suggested that when women become mothers, they become closer to their own mothers. This is thought to be related to the woman having a greater understanding of motherhood and so appreciating her own mother more. Consequently, emotional support from a mother may be unique due to their lived experience of motherhood and having mothered the new mother.

The factors influencing depression and stress also included practical support from an 'other'. Practical support has previously been shown to be important when managing life transitions (Kaniasty & Norris, 1992) and it is understandable that mothers with all the new challenges they face will require an element of practical help. It is interesting to note that when women had the opportunity to select two 'other' important people to provide support, few selected their fathers (N=7) and the majority of people selected to fill this role were female (best friends and sisters). Therefore it may be that, aside from a husband (or partner) there is a protective factor in help received from other women during early transition to motherhood.

4.2.4 Relationship between barriers to help-seeking, emotional distress and social support

It is important to be able to identify groups of women who may be less likely to seek support for difficulties in the postnatal period. The results of this study found that

women reporting higher levels of symptomatology (depression, anxiety and stress) perceived more barriers to help-seeking. This suggests that the women who are most likely to need help due to distress are least likely to ask for it. This is consistent with previous findings that women who suffer significant distress in the postnatal period do not seek help for their difficulties (Seeley *et al.*, 1996).

In addition women receiving less practical and emotional support and who were less satisfied with the support received perceived more barriers to help-seeking. This suggests that women with difficulties in their social world and thus those most likely to benefit from the assistance of an outside source are less likely to ask for it. It could be hypothesised that people providing less social support will not recognise that the woman is struggling and thus not encourage her to seek help, leaving her to feel she is expected to cope alone. The role of the social network has been previously been identified as a facilitator for help-seeking (Dennis & Chung-Lee, 2006).

Women with lower ideal emotional scores perceived more barriers to help-seeking. Although the ideal emotional score on the SOS is primarily used to calculate the discrepancy score, which highlights satisfaction with support, it may itself point to something interesting when considered. Power (1988) previously found that depressed people have lower expectations of support. It can be hypothesised that people have lower ideal scores as they have previously experienced being let down and so lower their expectations to protect themselves from future disappointment. This may impact on help-seeking as women with lower ideal emotional scores may expect less from services and will therefore be less likely to approach them for help.

Overall, these results suggests that vulnerable women, those suffering significant distress with little social support and a history of being let down, are less likely to present to services for help with emotional difficulties.

Although the results of this study have shown the barriers to help-seeking measure to have a reliable one-factor solution and sufficient face-validity, any conclusions drawn have to be tentative as the full psychometric properties have not yet be developed and the sample size was underpowered for factor analytical purposes (Tabachnick & Fidell, 2000). In addition, no outcome measure was used so although hypothesised to predict barriers to help-seeking it was not possible to ascertain whether women with high scores actually differed in their help-seeking behaviour to those with lower scores. Future research could be directed towards further development of this scale as the evidence suggests that women in the postnatal period do not typically seek help for difficulties (Dennis & Chung-Lee) and it is important to be able to identify groups who find this more difficult so barriers can be reduced and help-seeking encouraged.

4.2.5 Treatment preferences for postnatal emotional distress

Over half (59.1 per cent) of the postnatal women in the study indicated that for help with postnatal emotional difficulties they would consider speaking to their general practitioner, 29.5 per cent of women indicated that they would speak to a health visitor and 29.5 per cent indicated that they would consider seeing a professional, such as a clinical psychologist or counsellor for one-to-one therapy. These treatment preferences are in line with existing literature, which suggests that women in the postnatal period express a preference for talking treatments (Oates *et al.*, 2004). In clinical practice the majority of postnatal women with mild depressive

symptomatology are managed by their health visitor (Alder *et al.*, 2003) and it is interesting to note that women did not show a preference for speaking to a health visitor over a professional for one-to-one-therapy as both options were selected by 29.5 per cent of women. Previous literature has found that women are often hesitant about approaching mental health services (McIntosh, 1993) These results can support this claim as although almost a third of women indicated that they would consider seeing a professional for one-to-one therapy, the other two thirds did not endorse this option.

A quarter of the women surveyed also indicated that if suffering postnatal emotional distress they would consider attending a social support group and just over a fifth endorsed a group for women experiencing similar difficulties. Previous research has found the provision of groups and additional social support to be acceptable treatment options for this population (McIntosh, 1993; Templeton *et al.*, 2003).

The results indicated that approximately a third of women would consider the use of self-help reading material, around a fifth would use an internet site and about ten per cent would use a recommended self-help CD. To the author's knowledge there is no previous literature detailing the acceptability of self-help materials for postnatal women. However, clinically this is a cost effective evidence based intervention for the treatment of mild symptoms of depression, anxiety and stress (Roth & Fonagy, 2004) and consequently may be considered by services for use with women experiencing difficulties in the postnatal period.

Telephone advice from a trained professional was the least endorsed option by women (9.8 per cent). This is interesting to note as Cardone *et al.* (2006) developed a

telephone screening and communication pathway for women at high-risk of developing PND. They concluded that the majority of women readily engaged in this service and patient satisfaction was reported to be high.

Medication use was indicated to be considered as a treatment option for around a fifth of the women surveyed. Previous studies have found that women are concerned about using medication in the postnatal period with poor compliance and questions around breastfeeding, side effects and long-term use (Booth *et al.*, 2004). In addition, women still remain apprehensive of pharmacological treatment even after education is provided (Booth *et al.*, 2004). This highlights that in order to offset the risk of medication being used incorrectly care needs to be taken that any patient understands the risks and benefits and views it as an acceptable intervention.

It is important that services note the treatment preferences of postnatal women as they as they will be less likely to seek help form an intervention they do not view as appropriate (Dennis & Chung-Lee, 2007). Further investigation of preferred treatment options for different emotional disorders is warranted as the acceptability of treatments might differ and could inform service provision. In addition this research points to the importance of postnatal women receiving adequate information regarding effective evidence based treatments, which will allow them to make informed decisions about their care.

4.3 Theoretical considerations

This thesis did not set out to develop a theoretical model of postnatal emotional distress but by considering the postnatal period as a major life transition theoretical considerations can be discussed. Overall, women suffering postnatal emotional distress appear to have problems in their social worlds: they report receiving less social support from those around them and are less satisfied with the support they receive. However, as this is not time series data the direction of this relationship can only be hypothesised. In reality it is likely that the social support and postnatal emotional distress are interactive, influencing each other and resulting in a cycle of dissatisfaction. Attachment theory may go some way towards explaining the impact of parenthood on spousal relationships.

Research suggests that new parenthood is a time when the working models of attachment are particularly malleable and the effects of adult attachment style more pronounced as the couples bond strives to accommodate the baby (Feeney *et al.*, 2003). This may also play a role in the impact of postnatal emotional distress on the child as research has suggested women in close confiding marriages have warmer and more sensitive relationships with their infants (Cox *et al.*, 1989). In addition attachment may also impact on a woman's help-seeking behaviour as it is suggested that people with insecure attachment are generally poorer help-seekers than those with secure bonds (Collin & Feeney, 2000).

This highlights that any difficulties already apparent in a women's social world or any vulnerability to interpersonal difficulties related to attachment style may be magnified during the transition to parenthood and will also impact on the mother's ability to

bond with her child and seek help for postnatal emotional distress. Further research is required to look at how these variables exert an influence during the postnatal period and this work could also be extended to cover the antenatal period.

4.4 Future service implications

Due to adverse affects of depression in the postnatal period (Sharp *et al.*, 1995) the challenge to services is to identify women at risk of developing postnatal emotional distress as well as detecting existing illness and vulnerable women who are less likely to seek help. This will allow support to be offered quickly and the impact of any distress minimised. Future service implications will be discussed below.

Firstly, the prevalence of depression, anxiety and stress in the postnatal population of women in West Lothian highlighted that screening for postnatal emotional distress needs to be addressed and the role of postnatal depression as the marker for maladjustment questioned. The main screening method of perinatal distress in West Lothian is the EPDS, which is designed to detect depression. The findings of this study suggest that some women suffering significant 'distress' will not be detected if depression alone is screened for and an opportunity for improving the mental health of new mothers and babies missed. In an attempt to raise awareness of varied emotional difficulties in the postnatal period, the results of this study will be disseminated to healthcare professionals and health centres to be shared with both staff, pregnant and postnatal women.

As this research has highlighted that significant levels of stress and anxiety are present in a postnatal population, investigation into another screening measure able to

detect these would be warranted. NICE (2007) suggests the use of the EPDS, HADS or PHQ for detecting perinatal mental health. However, neither the HADS nor PHQ have been validated for the postnatal population. The DASS-21 used in this study could be suggested as an alternative screening measure due to its reliability and validity, which have been demonstrated in both the postnatal and antenatal populations (Ayers, 2001; Miller *et al.,* 2006).

If wider postnatal emotional distress is to be screened for then services also have a responsibility to consider their capacity to respond to women indicating distress. NICE (2007) advocate the use of a stepped care model of intervention and any treatments offered need to be evidence based and considered appropriate by postnatal women. Due to women's preference for talking treatments, developing evidenced based treatments specifically tailored to the women in the postnatal period is vital. At present there is evidence base for interventions based on a cognitive behavioural model (CBT) and an interpersonal approach (IPT) (NICE, 2007). There may also be a place for developing group interventions, as this would offer women a therapeutic yet socially supportive environment. In an attempt to treat low level distress self-help materials can often be effective (Roth & Fonagy, 2004). However, less than half of the women in this study highlighted them as an intervention they would consider acceptable and so thought must be given to this prior to dissemination.

In addition, Dennis and Chung-Lee (2006) highlighted that there is a practical aspect to women not seeking help for postnatal distress. Specifically women were often concerned about the logistics of having an additional pressure placed on their time. Consequently any interventions need to be tailored to reduce such pressure allowing

women to engage effectively. In addition, premises providing treatments need to be easily accessible and provide childcare facilities (Ugarriza, 2004).

This research identified psychosocial risk factors for postnatal emotional distress, which can be used to facilitate screening of high-risk women. Specifically stressful life events and a lack of social support are predictive of distress. These are variables that can be easily enquired about and women at a higher risk offered support accordingly. Clinically traditional interventions such as postnatal support groups are thought to impact on emotional support. However, services also need to be aware of the importance of practical support and women lacking in any aspect of support offered an intervention. Health visitors are in a good position to highlight women and direct them towards appropriate interventions with the hope of preventing or reducing distress in the postnatal period.

This research has found that it is the most vulnerable women who are most in need of support, who may find it hardest to ask. Services need to be aware that it is difficult for women to seek help during the postnatal period and consequently every effort should be made for women to discuss difficulties in a supportive environment.

5. CONCLUSION

The prevalence of significant rates of anxiety and stress as well as postnatal depression has been demonstrated in this population and provided evidence for widening the focus from PND towards postnatal emotional distress in an attempt to raise awareness of other difficulties and ensure an opportunity to reduce the impact of psychological distress on new mothers, babies and family systems is not being missed. This study has identified some key risk factors influencing postnatal emotional distress, and future research is needed to begin to develop a model of distress, which can lead to efforts in prediction and detection. Typically women do not seek help for emotional difficulties in the postnatal period and this study has attempted to gain a better understanding of what the barriers to help-seeking may be for women. It is postulated that the most vulnerable women who require it the most will be the least likely to seek help. Future research and service development is needed to address this issue with the aim of engaging more women in effective treatment as maternal mental health has a transgenerational impact spanning the mother, child and family, and ultimately wider societal systems.

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7. APPENDICES

Appendix 1: NHS Lothian Research Ethics Committee's approval

Lothian NHS Board

Deaconess House
148 Pleasance
Edinburgh
EH8 9RS
Telephone 0131 536 9000
Fax 0131 536 9009
www.nhslothian.scot.nhs.uk

NHS Lothian

Dear Miss Bonney

Full title of study: **Factors Influencing Postnatal Distress and Barriers to Seeking Support**
REC reference number: **07/S1103/67**

Thank you for your letter of 28th January 2008, responding to the Committee's request for further information on the above research and submitting revised documentation.

The further information was considered on behalf of the Committee by the Chair, Dr Christine West.

Confirmation of ethical opinion
On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised.

Conditions of approval
The favourable opinion is given provided that you comply with the conditions set out in the attached document. You are advised to study the conditions carefully.

Approved documents
The final list of documents reviewed and approved by the Committee is as follows:

Document	*Version*	*Date*
Application	AB/126822/1	10 November 2007
Investigator CV	for Rachel Bonney	09 December 2007
Investigator CV	for Michael John Power	10 December 2007
Protocol	Nov 2007	30 November 2007
Covering Letter	2 - with changes	28 January 2008
Letter from Sponsor	ACCORD	11 December 2007
Compensation Arrangements	AON Commercial insurance	20 July 2007
Questionnaire	2 - Non-validated	28 January 2008
Questionnaire: Validated	Not included	
Letter of invitation to participant	1	10 December 2007
Participant Information Sheet	2 - but two different versions of the same document enclosed	28 January 2008
Participant Consent Form	1 - in questionnaire	10 December 2007
Response to Request for Further Information		

R&D approval
All researchers and research collaborators who will be participating in the research at NHS sites should apply for R&D approval from the relevant care organisation, if they have not yet done so. R&D approval is required, whether or not the study is exempt from SSA. You should advise researchers and local collaborators accordingly.

Guidance on applying for R&D approval is available from http://www.rdforum.nhs.uk/rdform.htm.

Statement of compliance
The Committee is constituted in accordance with the Governance Arrangements for Research Ethics Committees (July 2001) and complies fully with the Standard Operating Procedures for Research Ethics Committees in the UK.

After ethical review
Now that you have completed the application process please visit the National Research Ethics Website > After Review

Here you will find links to the following

a) Providing feedback. You are invited to give your view of the service that you have received from the National Research Ethics Service on the application procedure. If you wish to make your views known please use the feedback form available on the website.
b) Progress Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
c) Safety Reports. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
d) Amendments. Please refer to the attached Standard conditions of approval by Research Ethics Committees.
e) End of Study/Project. Please refer to the attached Standard conditions of approval by Research Ethics Committees.

We would also like to inform you that we consult regularly with stakeholders to improve our service. If you would like to join our Reference Group please email referencegroup@nationalres.org.uk .

REC Reference Number	07/S1103/67	Please quote this number on all correspondence

With the Committee's best wishes for the success of this project

Yours sincerely

pp **Chair**
Lothian Local Research Ethics Committee 03
Email: elizabeth.harden@lhb.scot.nhs.uk

Enclosure: *Standard approval conditions*

Copy to: Ms Bacukoglu Marise

R&D office for NHS Lothian

Appendix 2: NHS Lothian Research & Development approval

University Hospitals Division
Queen's Medical Research Institute
47 Little France Crescent, Edinburgh, EH16 4TJ
HAC/SM/approval/2e

NHS Lothian
RESEARCH & DEVELOPMENT OFFICE
Room E1.12
Tel: 0131 242 3330
Fax: 0131 242 3343
Email:R&DOffice@luht.scot.nhs.uk

Director: Professor Heather A Cubie

Dear Miss Bonney

MREC No:	**N/A**
CRF No:	**N/A**
LREC No:	**07/S1103/67**
R&D ID No:	**2008/P/PSY/09**
Title of Research	Factors Influencing Postnatal Distress and Barriers to Seeking Support
Protocol No/Acronym:	**dated November 2007**

The above project has undergone an assessment of risk to NHS Lothian and review of resource and financial implications. I am satisfied that all the necessary arrangements have been set in place and that all Departments contributing to the project have been informed.

I note that this is a single centre study co-sponsored by **NHS Lothian and the University of Edinburgh.**

On behalf of the Chief Executive and Medical Director, I am happy to grant management approval from NHS Lothian to allow the project to commence, subject to the approval of the appropriate Research Ethics Committee(s) having also been obtained. You should note that any substantial amendments must be notified to the relevant Research Ethics Committee and to R&D Management with approval being granted from both before the amendments are made.

Please note that under Section A, Q35, NHS Lothian provides indemnity for negligence for NHS and Honorary clinical staff for research associated with their clinical duties. It is not empowered to provide non-negligent indemnity cover for patients. NHS Lothian does not provide indemnity against negligence for healthy volunteer studies. This is the personal responsibility of both NHS and honorary employees and is usually arranged with a medical defence organisation or through the University of Edinburgh.

This letter of approval is your assurance that NHS Lothian is satisfied with your study. As Chief Investigator or local Principal Investigator, you should be fully committed to your responsibilities within the Research Governance Framework for Health and Community Care, an extract of which is attached to this letter.

Yours sincerely

Heather A Cubie

Professor Heather A Cubie
R&D Director

Enc	**Research Governance Certificate**	**☑ (to be signed and returned)**
	Tissue Policy (if applicable)	**☐**
	MTA (if applicable)	**☐ (to be signed and returned by the recipient of Tissue)**

Copies ***Administrators, Research Ethics Committee***

"Improving health through excellence and innovation in clinical research"

Appendix 3: Participant information sheet

Emotional Distress, Social Support, Life Events & Barriers to Seeking Support in the Postnatal Period

Information for Prospective Participants

Introduction
You are being invited to take part in a research study. Before you decide you should read the following information. If you have any questions you can raise them with the study researcher (contact details are at the end of this sheet). Please ask if there is anything you are unclear about of if you would like more information.

What is the study about?
This study aims to look at emotional distress (anxiety, depression and stress) in the postnatal period. To help try to understand these difficulties the study is looking at social support and life events; both of which have been linked to emotional distress. The research also wants to look at what women perceive as potential barriers to seeking support during this time in their lives.

This information will help inform discussion about how services can be developed to best meet the needs of postnatal women suffering from emotional distress.

Why have I been chosen?
This study is hoping to include a large number of women who have recently had a baby and are over 18 years of age. You have been invited to participate because you fit into this category.

Do I have to take part in this study?

Participation in the study is entirely voluntary. This information sheet is to help you decide if you would like to take part. If you decide not to take part this will not affect any current or future care you receive.

What will participation involve?
If you would like to participate you will be asked to fill in a questionnaire. This will take around 30 minutes to complete. You will only be asked to complete the questions once and all responses will be confidential. The questionnaire asks a range of questions about symptoms related to low mood, anxiety and stress. There are also questions about what types of support you would like to be offered, your level of social support, recent life events and potential barriers to help seeking.

What are possible benefits of taking part?
A benefit of taking part is that your mood, anxiety and stress levels will be screened. If the researcher (who is a trainee clinical psychologist) is concerned about your responses then she will contact you to discuss this and may provide verbal or written advice. With your consent she may also pass this information on to your GP, or staff currently supporting you so that suitable help can be arranged. If consent is not given but level of concern is high then the researcher will have to act on her duty of care and contact the relevant professional.

The information you provide will be extremely valuable in helping us to understand and support postnatal women suffering from emotional distress.

Will my participation in the study be kept confidential?
The information you provide will be strictly confidential you will not be personally identified in any of the study results or reports. The only person with direct access to your information will be the study researcher.

Please note: if the researcher is concerned about your responses she will contact you to discuss this and offer you advice on where to seek support. The researcher may also wish to highlight any concerns to your GP, health visitor or another professional involved in your care. To make this possible please provide us with your name and address when you return your questionnaire. Your contact details will remain strictly confidential.

What will happen to the results of the study?
The results will be included in a doctoral thesis submitted to the University of Edinburgh by the study researcher. You will not be identified in this or any other report resulting from the study. A brief summary of the results will be made available to the Edinburgh Postnatal Depression Project and health centres in West Lothian.

Who else knows about the study?
The study has been reviewed by the Lothian Research Ethics Committee and the University of Edinburgh Doctorate in Clinical Psychology Course Organisation Committee.

What should I do now?
If you wish to take part: Please fill in the questionnaire you will find in the envelope.
If you do not wish to take part: I would like to thank you for taking the time to read this information sheet. You need to do nothing more. Your decision not to take part is fully respected.

Who can I contact?
If you have been affected by anything in the questionnaire then please feel free to contact the Study Researcher on the telephone number below. Alternatively, I would advise you to speak to your GP or another professional involved in your care.

If you have any questions about any aspect of the study or require further information please do not hesitate to contact the Study Researcher at the address given below:

Rachel Bonney

Trainee Clinical Psychologist / Study Researcher

Address:

Telephone:

This information is for you to keep. Thank you for taking the time to read this.

Appendix 4: Questionnaire

QUESTIONNAIRE

Emotional Distress, Related Factors and Barriers to Help Seeking in the Postnatal Period

Please complete the following information:

Declaration of consent

I have read and understood the information given to me about the study

I understand that participation is voluntary and I am free to withdraw at any point

I understand that the researcher may contact me if they are concerned about my well-being

I hereby fully and freely agree to participate in the study

Name (Please print) ……

Signature …… ……..Date …….

Address: ……..
……
……

Postcode: ……

Telephone number: ……

GP's Name: ……

GP's Address: ……
……
……
……

Postcode: ……

NB- The above information will be stored separately from the rest of the questionnaire so that your responses are anonymous. I will only use these details if there are any concerns about your well-being (as explained in the 'Information for Prospective Participants Sheet').

1. What is your age? ……

2. What is your marital status? **Please put an "X" on the line**

Single …. Married or co-habiting …. Separated …. Divorced…. Widowed ….

3. What qualifications do you have? **Please put an "X" on the line**

Standard grade/ GCSE's …. Higher/A-levels …. College Diploma …. University Degree ….

Other (please specify) ……..

4. What is your work status? **Please put an "X" on the line**

Full-time employment …. Part-time employment …. Look after home/family ….

Student or further education …. Permanently sick/disabled …. Volunteer ….

Unemployed …. Maternity leave …. Other (please specify)……

5. What is your ethnic group? **Please put an "X" on the line**

White (e.g. Scottish/British/Irish) …. Indian …. Pakistani …. Bangladeshi …. Chinese ….

Caribbean …. African …. Mixed background …. Other ethnic group …….

6. How many children do you have? ……

7. How old are they?

.....

8. What is your youngest child's date of birth? ……

9. Are you receiving support from any of the following professionals (in addition to your routine medical / postnatal care)? **Please put an "X" on the line**

Specialist Health Visitor …. GP …. Psychologist …. Counsellor ….

Community Psychiatric Nurse …. Nurse …. Other ….

10. Have you previously suffered from a mental illness? If yes, please give details.

.....

11. If you wanted support with emotional issues (such as low mood or anxiety), which would you consider?

Please mark with an "X"	X
Recommended 'self-help' reading material	
Recommended 'self-help' CD	
Recommended 'self-help' internet site	
Speaking to a GP	
Use of Medication	
Speaking to a Health Visitor	
Attending a therapy group for women with similar difficulties (e.g. an anxiety management group)	
Attending a social support group (e.g. an informational group for women with small children)	
Telephone advice from a trained professional	
Seeing a professional (such as a clinical psychologist / counsellor) for one-to –one therapy	

12. Are there any other types of support that you think should be provided for postnatal women suffering from emotional issues (such as low mood and anxiety)? If yes, please give details below:

.....

Please read each statement and **CIRCLE** a number 0, 1, 2 or 3 which indicates how much the statement applied to you **OVER THE PAST WEEK**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:
0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of the time
3 Applied to me very much, or most of the time

1.	I found it hard to wind down	0	1	2	3
2.	I was aware of dryness of my mouth	0	1	2	3
3.	I couldn't seem to experience any positive feelings at all	0	1	2	3
4.	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5.	I found it difficult to work up the initiative to do things	0	1	2	3
6.	I tended to over-react to situations	0	1	2	3
7.	I experienced trembling (e.g. in the hands)	0	1	2	3
8.	I felt that I was using a lot of nervous energy	0	1	2	3
9.	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10.	I felt that I had nothing to look forward to	0	1	2	3
11.	I found myself getting agitated	0	1	2	3
12.	I found it difficult to relax	0	1	2	3
13.	I felt down-hearted and blue	0	1	2	3
14.	I was intolerant with anything that kept me from getting on with what I was doing	0	1	2	3
15.	I felt I was close to panic	0	1	2	3
16.	I was unable to become enthusiastic about anything	0	1	2	3
17.	I felt I wasn't worth much as a person	0	1	2	3
18.	I felt I was rather touchy	0	1	2	3
19.	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart increase, missing a beat)	0	1	2	3
20.	I felt scared without any good reason	0	1	2	3
21.	I felt that life was meaningless	0	1	2	3

Depression Anxiety Stress Scales (Lovibond & Lovibond, 1995)

Listed below are two sources of personal and social support on which you may be able to draw. For each person please **CIRCLE** a number from 1 to 7 to show how well support is provided

The second part of each question asks you to rate how you would like things to be if they were exactly as you hoped for. As before, please put a **CIRCLE** around a number between 1 to 7 to show what your rating is

Please note: If a particular source of support does not exist for you please **Substitute** the name of 'an other' who acts to provide this support

Person 1: Husband or Partner (Substitution please STATE THE RELATIONSHIP ……...)

	N ever		**Sometimes**				**Always**
1a. Can you trust, talk to frankly and share your feelings with this person?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
2a. Can you lean on and turn to this person in times of difficulty?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
3a. Do they give you practical help?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
4a. Can you spend time with them socially?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7

Person 2: Mother (Substitution please STATE THE RELATIONSHIP ……...)

	Never		**Sometimes**				**Always**
1a. Can you trust, talk to frankly and share your feelings with this person?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
2a. Can you lean on and turn to this person in times of difficulty?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
3a. Do they give you practical help?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
4a. Can you spend time with them socially?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7

Significant Others Scale (Power et al. 1988)

Please list below TWO other people who are important in your life. Typical other relationships include brother, sister, close friend etc. As before for these people please **CIRCLE** a number from 1 to 7 to show how well support is provided

Again, the second part of each question asks you to rate how you would like things to be if they were exactly as you hoped for. As before, please put a **CIRCLE** around a number between 1 to 7 to show what your rating is

Person 3: (Please STATE THE RELATIONSHIP e.g. –best friend or sister)

……

	Never			**Sometimes**			**Always**
1a. Can you trust, talk to frankly and share your feelings with this person?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
2a. Can you lean on and turn to this person in times of difficulty?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
3a. Do they give you practical help?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
4a. Can you spend time with them socially?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7

Person 4: (Please STATE THE RELATIONSHIP e.g. –best friend or sister)

……

	Never			**Sometimes**			**Always**
1a. Can you trust, talk to frankly and share your feelings with this person?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
2a. Can you lean on and turn to this person in times of difficulty?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
3a. Do they give you practical help?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7
4a. Can you spend time with them socially?	1	2	3	4	5	6	7
b. What rating would your ideal be?	1	2	3	4	5	6	7

Please indicate whether any of these events have happened to you since you found out you were pregnant **with your youngest child**. If an event applies to you put an **"X"** in the box marked **'YES'** or if it does not apply to you put an **"X"** in the box marked **'NO'**. You may find that none of these statements apply to you, or you may find that some of them apply. However, **if you answer 'YES'** to any questions please indicate the degree of distress you experienced as a result of that particular situation.

If 'YES' was the situation:

	NO	YES	Not at all distressing	Somewhat distressing	Moderately distressing	Extremely distressing
1. Have you had a serious illness or injury?		>	>			
2. Has a close relative had a serious illness or injury?		>	>			
3. Has there been a death in your close family (mother, father, brother, sister, wife, husband, son or daughter)		>	>			
4. Has there been a death of a close friend, uncle, aunt or Cousin?		>	>			
5. Have you had a separation due to marital difficulties?		>	>			
6. Have you broken off a steady relationship?		>	>			
7. Have you had a serious problem with a close friend, neighbour or relative?		>	>			
8. Since you found out you were pregnant with your youngest child, has there been any period during which you were unemployed and seeking work for more than a month?		>	>			
9. Have you been sacked from your job?		>	>			
10. Have you had a major financial crisis?		>	>			
11. Have you had any problems with police or have you had a court appearance?		>	>			
12. Have you had any valuables lost or stolen?		>	>			
13. Have you had an increase in arguments with your partner?		>	>			
14. Have you had trouble or behaviour problems with your children?		>	>			
15. Have you moved house?		>	>			
16. Has an immediate family member had difficulties with drugs or alcohol?		>	>			
17. Other event **(Please specify)** **……..** **……..**		>	>			

This section aims to find out why women might find it difficult to seek help for postnatal mental health problems (postnatal means after having a baby).

Below is a list of barriers to help seeking for postnatal mental health problems. Please **CIRCLE** the number to show how much you agree with each statement:

1= Disagree, 3= Neutral, 5= Agree

1. Women are reluctant to obtain professional assistance for postnatal mental health problems

Disagree				**Agree**
1	2	3	4	5

2. Women find it easy to disclose distressing feelings to their partner, family, friends or health Professionals

Disagree				**Agree**
1	2	3	4	5

3. Women don't know where to get help for postnatal mental health problems

Disagree				**Agree**
1	2	3	4	5

4. Women are aware of treatment possibilities for postnatal mental health problems

Disagree				**Agree**
1	2	3	4	5

5. Health professional roles' are limited to physical health

Disagree				**Agree**
1	2	3	4	5

6. Women have knowledge about postnatal mental health problems

Disagree				**Agree**
1	2	3	4	5

7. Women often deny they are experiencing postnatal mental health difficulties

Disagree				**Agree**
1	2	3	4	5

8. Women believe they can seek support to cope with the highs and lows of motherhood

Disagree				**Agree**
1	2	3	4	5

9. Women fear having their baby taken away if they admit to experiencing emotional difficulties

Disagree				**Agree**
1	2	3	4	5

10. There is no stigma surrounding postnatal mental health

Disagree				**Agree**
1	2	3	4	5

11. Postnatal mental health problems are something to be ashamed of

Disagree				**Agree**
1	2	3	4	5

12. Women are not scared of being labelled ‘mentally ill’

Disagree				**Agree**
1	2	3	4	5

13. Women are hesitant of approaching mental health services for help with postnatal mental health problems

Disagree				**Agree**
1	2	3	4	5

14. Women have sufficient time to seek help for emotional problems

Disagree				**Agree**
1	2	3	4	5

15. Appointment times are often inconvenient for women trying to seek help for emotional difficulties

Disagree				**Agree**
1	2	3	4	5

16. Partners and families have knowledge about postnatal mental health difficulties

Disagree				**Agree**
1	2	3	4	5

17. Postnatal mental health problems give the family a 'bad name'

Disagree				**Agree**
1	2	3	4	5

18. Partners and families encourage women to seek help for postnatal mental health problems

Disagree				**Agree**
1	2	3	4	5

19. It is unacceptable to admit/discuss emotional issues *outside* the family

Disagree				**Agree**
1	2	3	4	5

20. It is acceptable to admit/discuss emotional issues *within* the family

Disagree				**Agree**
1	2	3	4	5

21. Appointments with health professionals are too short to discuss emotional difficulties

Disagree				**Agree**
1	2	3	4	5

22. Postnatal mental health problems are taken seriously by health professionals

Disagree				**Agree**
1	2	3	4	5

23. Emotional problems are not assessed properly by health professionals

Disagree **Agree**

1 2 3 4 5

24. Health professionals do refer postnatal women on to other services for help with emotional problems

Disagree **Agree**

1 2 3 4 5

25. Health professionals are not knowledgeable about postnatal mental health problems

Disagree **Agree**

1 2 3 4 5

26. Services are geared towards picking up postnatal mental health problems

Disagree **Agree**

1 2 3 4 5

27. Health professionals do not want to discuss emotional issues

Disagree **Agree**

1 2 3 4 5

Thank you for your help with this questionnaire.

If you have any additional comments please write these below:

……
……
……

Appendix 5: Psychiatric history

DETAILS OF PSYCHIATRIC HISTORY		
	N	**%**
Depression	8	6.1
Postnatal depression	10	7.6
Depression and anxiety	1	.8
Depression, anxiety and stress	1	.8
Stress	1	.8
No information provided	1	.8

Appendix 6: Details of 'other' qualifications

FREQUENCY OF 'OTHER' QUALIFICATIONS		
	N	**%**
Higher National Certificate (HNC)	2	1.5
National Nursery Examination Board (NNEB)	1	<1
Postgraduate Certificate	2	1.5
Scottish Vocational Qualification (SVQ)	6	4.5
Certified Invesment Management Analyst (CIMA)	3	2.3
PhD	1	<1
National Vocational Qualifications (NVQ)	1	<1

Appendix 7: Details of 'other' life events

FREQUENCY OF 'OTHER' LIFE EVENTS		
	N	**%**
Building work on home	1	< 1
Morning sickness	1	< 1
Returning to work	1	< 1
Travel abroad	1	< 1
Changed job	1	< 1
Husband leaving job to study	1	< 1

Appendix 8: Effect size formulas

Formula used to calculate effect sizes (Field, 2006)

t-test

$$r = \sqrt{(t^2 / t^2 + df)}$$

Mann-Whitney test

$$r = Z / \sqrt{N}$$

Appendix 9: Correlation matrix of variables

KEY FOR VARIABLES IN CORRELATION MATRIX

VARIABLE	FULL NAME
Age	Maternal age
Marital status	Marital status
Psych history	Psychiatric history
Employ	Employment status
Edu	Education
LE number	Number of life events experienced
LE distress	Distress from life events experienced
HAE	Actual emotional support from a husband (or partner)
HIE	Ideal emotional support from a husband (or partner)
HAP	Actual practical support from a husband (or partner)
HIP	Ideal emotional support from a husband (or partner)
HED	Emotional discrepancy score for a husband (or partner)
HPD	Practical discrepancy score for a husband (or partner)
MAE	Actual emotional support from a mother
MIE	Ideal emotional support from a mother
MAP	Actual practical support from a mother
MIP	Ideal practical support from a mother
MED	Emotional discrepancy score for a mother
MPD	Practical discrepancy score for a mother
O1AE	Actual emotional support from an ‘other’
O1IE	Ideal emotional support from an ‘other’
O1AP	Actual practical support from an ‘other’
O1IP	Ideal practical support from an ‘other’
O1ED	Emotional discrepancy score for an ‘other’
O1PD	Practical discrepancy score for an ’other’
O2AE	Actual emotional support from a second ‘other’
O2IE	Ideal emotional support from a second ‘other’
O2AP	Actual practical support from a second ‘other’
O2IP	Ideal practical support from a second ‘other’
O2ED	Emotional discrepancy score for a second ‘other’
O2PD	Practical discrepancy score for a second ‘other’
Dep	DASS-21 depression score
Anx	DASS-21 anxiety score
Stress	DASS-21 stress score

	Age	Marital status	Psych History	Parity	Employ	Educ	LE number	LE distress	HAE	HIE	HAP	HIP
Age	1											
Marital status	.379**	1										
Psych history	-.092	-.015	1									
Parity	.212*	.013	-.212*	1								
Employ	-.235**	-.214*	-.090	.263**	1							
Edu	.037	.053	-.079	-.100	.012	1						
LE number	-.128	-.007	-.083	.067	.072	.092	1					
LE distress	-.092	.025	-.111	.045	.043	.072	.892**	1				
HAE	.211*	-.023	-.021	-.109	-.082	-.104	-.198*	-.202*	1			
HIE	.094	-.047	.057	-.096	-.126	-.128	-.053	.038	.470**	1		
HAP	.078	-.056	.116	-.160	-.110	-.215*	-.248**	-.229*	.608**	.356**	1	
HIP	.005	.089	.061	-.136	-.062	-.053	-.069	.014	.430**	.495**	.650**	1
HED	-.167	-.028	.116	.030	-.038	.025	.188*	.237**	-.818**	.036	-.433**	-.256**
HPD	-.120	.077	-.090	.090	.056	.266**	.284**	.302**	-.569**	-.238**	-.920**	-.377**
MAE	-.012	-.204*	.006	-.069	-.068	-.038	-.164	-.178	.357**	.281**	.339**	.345**
MIE	-.025	-.155	-.048	-.075	.056	.014	-.117	-.033	.204*	.442**	.287**	.403**
MAP	-.081	-.301	.038	-.071	.075	-.020	-.148	-.177	.324**	.237*	.418**	.357**
MIP	-.189*	-.272	.029	-.028	.145	-.015	-.019	-.010	.115	.295**	.316**	.369**
MED	.003	.144	-.034	.024	.124	.077	.121	.206*	-.277**	-.037	-.172	-.172
MPD	-.043	.181*	-.043	.065	.023	.014	.182	.226*	-.305**	-.076	-.248**	-.200*
O1AE	.014	-.070	.007	-.039	.047	-.099	-.354**	-.335**	.500**	.343**	.369**	.275**
O1IE	-.251**	-.220	-.035	-.054	.155	-.141	-.018	.080	.162	.421**	.260**	.302**
O1AP	-.055	-.112	.154	-.106	-.055	-.127	-.302**	-.273**	.351**	.275**	.521**	.495**
O1IP	-.170	-.205*	-.010	-.028	.052	-.135	-.016	.054	.148	.257**	.394**	.497**
O1ED	-.186*	-.069	-.034	.016	.037	.019	.420**	.464**	-.485**	-.128	-.266**	-.140
O1PD	-.087	-.059	-.221*	.094	.112	.050	.415**	.441**	-.342**	-.162	-.364**	-.254**
O2AE	.032	-.154	-.025	-.056	.060	-.117	-.234*	-.219*	.444**	.123	.450**	.317**
O2IE	-.128	-.149	-.106	-.127	.146	-.116	-.079	-.010	.415**	.306**	.276**	.327**
O2AP	.003	-.220*	-.072	-.084	.064	-.088	-.079	-.113	.307**	.040	.553**	.388**
O2IP	-.222*	-.259**	-.048	-.230*	.071	-.091	.069	.104	.177	.189	.343**	.375**
O2ED	-.152	.078	-.034	-.040	.015	.076	.249*	.278**	-.274**	.034	-.382**	-.208*
O2PD	-.210*	.063	.031	-.108	-.022	.047	.170	.232*	-.227*	.107	-.422**	-.214*
Dep	-.091	.096	-.177*	.240**	.099	.022	.280**	.349**	-.335**	-.177	-.282**	-.064
Anx	-.124	.096	.008	.090	.013	-.021	.229**	.342**	-.183*	-.028	-.211*	-.023
Stress	-.066	.112	-.124	.131	.101	.085	.272**	.358**	-.291**	-.095	-.347**	-.135

	HED	HPD	MAE	MIE	MAP	MIP	MED	MPD	O1AE	O1IE	O1AP	O1IP
Age												
Marital status												
Psych history												
Parity												
Employ												
Edu												
LE number												
LE distress												
HAE												
HIE												
HAP												
HIP												
HED	1											
HPD	.472**	1										
MAE	-.215*	-.219*	1									
MIE	.014	-.150	.677**	1								
MAP	-.203*	-.324**	.791**	.582**	1							
MIP	.047	-.184*	.615**	.783**	.676**	1						
MED	.293**	.132	-.759**	-.059	-.544**	-.128	1					
MPD	.310*	.240*	-.530**	-.078	-.737**	-.037	.659**	1				
O1AE	-.404*	-.407**	.385**	.365**	.397**	.288**	-.225*	-.305**	1			
O1IE	.000	-.215*	.331**	.455**	.374**	.443**	-.085	-.133	.586	1		
O1AP	-.273**	-.466**	.330**	.311**	.474**	.367**	-.198*	-.353**	.689**	.410**	1	
O1IP	-.057	-.274**	.297**	.407**	.424**	.512**	-.077	-.159	.415**	.611**	.726**	1
O1ED	.492**	.348**	-.234*	-.118	-.211*	-.030	.217*	.274**	-.801**	-.009	-.557**	-.072
O1PD	.324**	.409**	-.172	-.039	-.260**	-.030	.209*	.344**	-.585**	.009	-.726**	-.066
O2AE	-.443**	-.375**	.180	.262**	.229*	.208*	-.009	-.122	.255**	.169	.314**	.216*
O2IE	-.380**	-.186	.263**	.373**	.302**	.301**	-.066	-.174	.322**	.413**	.287**	.317**
O2AP	-.344**	-.461**	.230*	.255*	.367**	.279**	-.077	-.242*	.299**	.219*	.534**	.464**
O2IP	-.167	-.226*	.211*	.301**	.316**	.321**	-.042	-.173	.238*	.446**	.470**	.603**
O2ED	.299**	.350**	-.034	-.083	-.077	-.056	-.054	.027	-.093	.069	-.195*	-.061
O2PD	.297**	.402**	-.111	-.073	-.191	-.081	.062	.162	-.177	.096	-.293**	-.101
Dep	.253**	.336**	-.303**	-.057	-.299**	-.041	.370**	.386**	-.368**	-.054	-.222*	.021
Anx	.183*	.267**	-.235*	-.012	-.212*	.009	.318**	.308**	-.276**	.046	-.157	.069
Stress	.260**	.375**	-.280**	-.051	-.245**	-.035	.342**	.321**	-.369**	.051	-.269**	-.064

	O1ED	O1PD	O2AE	O2IE	O2AP	O2IP	O2ED	O2PD	Dep	Anx	Stress
Age											
Marital status											
Psych history											
Parity											
Employ											
Edu											
LE number											
LE distress											
HAE											
HIE											
HAP											
HIP											
HED											
HPD											
MAE											
MIE											
MAP											
MIP											
MED											
MPD											
O1AE											
O1IE											
O1AP											
O1IP											
O1ED	1										
O1PD	.739**	1									
O2AE	-.192*	-.231*	1								
O2IE	-.112	-.090	.693**	1							
O2AP	-.206*	-.289**	.663**	.484**	1						
O2IP	.036	-.052	.380**	.620**	.687**	1					
O2ED	.165	.236*	-.831**	-.191	-.517**	-.038	1				
O2PD	.298**	.336**	-.565**	-.118	-.747**	-.045	.681**	1			
Dep	.428**	.354**	-.355**	-.256**	-.232*	-.056	.286**	.261**	1		
Anx	.390**	.319**	-.284**	-.102	-.309**	.021	.309**	.447**	.793**	1	
Stress	.511**	.354**	-.360**	-.148	-.343**	-.070	.378**	.405**	.848**	.773**	1